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ABSTRACT

This document outlines the proposals for a regional information system strategy resulting from a project undertaken by the Caribbean Community Secretariat and the United Nations Economic Commission for Latin America and the Caribbean Sub-regional Headquarters for the Caribbean. The document covers: (1) the role of information in the development process; (2) policy issues as they exist in relation to geographical groupings of Caribbean states; (3) priority information development sectors, such as agriculture, industry, and tourism; (4) information services required by the development community and by innovators in the public and private sector; (5) description of programs offered by existing systems; (6) mandates of relevant organizations that have already implemented systems in their areas of specialization; (7) description of activities of regional organizations in the development of regional information systems; (8) activities of extra-regional and international organizations in the development of information systems; (9) examination of human, technological, information and financial resources available for maintenance of regional information systems; (10) national information policies; (11) mechanisms such as libraries and statistical services that facilitate regional and national information flow; (12) proposals that identify systems to be linked, recommend the establishment of systems meeting specific needs, and create a regional network to consult and monitor regional information systems; and (13) policy monitoring. Reports of meetings with regional organizations and a list of participants are appended. (KRN)

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Manuscript Report 214e

A Regional Information System Strategy for the Caribbean for the Year 2000

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Esta serie incluye ponencias de reuniones, informes internos y documentos técnicos que pueden posteriormente conformar la base de una publicación formal. El informe recibe distribución limitada entre una audiencia altamente especializada.

IDRC-MR214e

A REGIONAL INFORMATION SYSTEM STRATEGY FOR THE CARIBBEAN FOR THE YEAR 2000

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V Postscript: the Consultative Committee on Caribbean Regional Information Systems.

FOREWORD

Over the years, the Information Sciences Division of IDRC has supported a number of information systems in the Caribbean, ranging from multi-disciplinary national and sub-regional systems to those with specialized sectoral foci. We were, therefore, particularly pleased to be able to respond to this joint initiative from the Trinidad and Tobago office of the Economic Commission for Latin America and the Caribbean (ECLAC) and the Secretariat of the Caribbean Community (CARICOM) in seeking support for the development of a regional information policy. The request emphasized the importance the governments of the region accord to the role of effective information services in the development process, and the long term commitment to their support.

The imperative of formulating information policies to ensure better coordination and cooperation between information systems and services, to make the most effective use of scarce resources, and ensure the ready accessibility of information to busy decision-makers and development practitioners is as valid for developed as developing countries - and many lessons can be learnt from individual experiences in developing and implementing these policies.

The process is intensive and time-consuming, and the iterative cycle of researching, reporting, consulting, presenting, and endorsing of recommendations that may result in a national or regional policy statement serves only to set the stage for implementation.

Many national information policy statements exist - and reflect the hard work of the individual countries, and their belief that these are necessary instruments to support their development programs. There is less information available on the successful implementation of these policies, or on regional initiatives such as this one.

The substance of the Caribbean experience in achieving this platform for regional action will interest a wide range of audiences. This manuscript report presents the Consultants's report, the recommendations agreed at a meeting of the region's information professionals, and a brief note on the presentation of these recommendations at the Eighth Meeting of the Conference of Heads of Government of the Caribbean Community June/July 1987 and the Tenth session of the Caribbean Development and Cooperation Committee (CDCC).

The recommendations were ratified by all parties and the first meeting of the Regional Consultative Committee on Caribbean Regional Information Systems took place in October 1988.

Martha Stone
Director,
Information Sciences,
International Development Research Centre

INTRODUCTION
to
Regional Information Strategy Document

The impetus for the development of regional information systems in the Caribbean developed greater momentum when it was recognized by policy-makers and their researchers that the provision of information was central to the economic and social progress of the region. The impetus came at a time when Caribbean governments were looking towards cooperation among themselves as a means of resolving many of their developmental problems. Mechanisms for the exchange of information and experiences among countries were viewed as critical.

It is within this background of recognition of the importance of information for development and the need for regional organizations - such as the Caribbean Development and Cooperation Committee (CDCC), the CARICOM Secretariat, the Caribbean Development Bank and more recently the Organization of Eastern Caribbean States - to access data about their member states, that Caribbean governments began to give mandates for the development of regional information systems in various priority areas. The political will of governments and their commitment to upgrade national information infrastructures and to develop channels of cooperation led to the development of regional information networks in areas such as trade, agriculture, planning, patents, energy and technology.

This collaborative approach to the development of information systems has provided several benefits and is generally accepted by governments as an appropriate way of implementing regional cooperation in the field of information. In the early states of the development of these networks, there was little scope for overlap because the sectors and principal users were clearly identified. However, between 1984 and 1987, eight regional systems were in the process of being established and ten others planned. There is a strong possibility that duplication and overlap will occur. There is also concern about the financial, human and physical resources to sustain these systems after external funding has ceased.

Both ECLAC/CDCC and CARICOM Secretariats have been concerned with the possible acceleration of these regional information systems without there being an agreed information policy to provide guidelines for such development and the International Development Research Centre (IDRC), Canada was approached to fund a consultant mission to discuss the issues involved with policy-makers, planners, technical personnel and information specialists in the region, and to prepare an analytical report of the situation and make recommendations for a strategy to be implemented in the future. The present report is the result of the consultant mission and was submitted to governments for consideration and reviewed at an experts meeting held in Port-of-Spain in May 1987.

The CARICOM Heads of Governments and the Caribbean Development Cooperation Committee have since accepted the recommendations and mandated the respective Secretariats to work jointly towards the establishment of a Consultative Committee on Caribbean Regional Information Systems.

The CARICOM and ECLAC/CDCC Secretariats are pleased to see the fruition of this definitive work on the development of information systems in the region and endorse the publication of this report.

This publication may be regarded as a first step towards the coordination of regional efforts to manage the information resources of the region and it provides a basis for the continued monitoring and updating of developments in this field.

The Consultative Committee on Caribbean Regional Information Systems considers the existence of this work as an important support for the development of its programmes.

ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN
Subregional Headquarters for the Caribbean

CARIBBEAN COMMUNITY (CARICOM) SECRETARIAT

A REGIONAL INFORMATION SYSTEM STRATEGY FOR THE CARIBBEAN
TO THE YEAR 2000: a study prepared for
the Caribbean Development and Cooperation Committee and
the Caribbean Community

Report prepared by Fay Durrant Consultant

EXECUTIVE SUMMARY

This document outlines the proposals for a regional information system strategy which have resulted from the exercise jointly undertaken by the Caribbean Community (CARICOM) Secretariat, and the United Nations Economic Commission for Latin America and the Caribbean (UNECLAC) Sub-regional Headquarters for the Caribbean, with financial support from the International Development Research Centre (IDRC).

In an effort to identify the relevant issues which impact on the regional information systems, and to determine an acceptable strategy, the consultant examined the factors influencing the development of the regional information systems, the resources available in the region, and the national policies and plans which are to be implemented in the next decade, and has therefore made recommendations on the development of the systems, as well as their products and services.

While undertaking a mission to the UNECLAC Sub-regional Headquarters for the Caribbean, the CARICOM Secretariat, Trinidad and Tobago, Barbados, Saint Lucia, the Dominican Republic, Jamaica, and Canada, the consultant discussed issues outlined in the Background paper relating to the development of a regional information policy with officials responsible for the development of national information policies, national information systems and regional information systems, and programmes.

The draft report of the Consultant was reviewed by a technical meeting of the system managers and other specialists, and the modifications proposed by the meeting have been included in this final document.

CHAPTER 1

The regional information systems

The regional information systems under discussion have been established by the governments of the region to provide access to data relating to or relevant to the member states, and to provide this information as an input to the regional development process.

CHAPTER 2

The geographical area

The regional groupings included in this study include the Caribbean Development and Cooperation Committee, (CDCC), the Caribbean Community (CARICOM), The Caribbean Development Bank (CDB), and the Organization of Eastern Caribbean States, (OECS). As the membership of these groupings overlaps, it seemed appropriate to examine the policy issues in relation to the English-speaking Caribbean, Cuba, Haiti, the Dominican Republic, Suriname, the Netherlands Antilles, and Aruba.

CHAPTER 3

Priority sectors

Agriculture, Industry, Energy, Trade, Tourism, Socio-economic planning, Public Health and Preventive Medicine, Education, Disaster Preparedness and the Environment, were identified by member states as priority development areas and regional information systems exist or have been proposed for these priority sectors, except Tourism and the Environment. The technical meeting requested that culture be also included as an area for the development of a regional information system.

CHAPTER 4

Information needs and services required

It is proposed that the systems will serve all members of the development community : policy-makers, planners, administrators and managers, technical personnel and researchers in the service of the governments of the member states, and will also extend their services to other members of the community, the farmers, entrepreneurs, and the exporters - the potential innovators in the public and private sector.

CHAPTER 5

Regional information systems and programmes

Regional and sub-regional systems exist in the areas of Agriculture, Disaster Preparedness, Trade, Socio-economic planning, Industry, Energy, and Banking and Finance, and include or expect to include, bibliographical data on documents produced in or about the region, textual data on regional specialists and specialist institutions and research in progress, and quantitative data on regional production.

One system has been repackaging specialist information for distribution to small-scale industrialists - The Caribbean Technological Consultancy Service (CTCS), and another system the Association for Caribbean Transformation Agricultural Information Service, ACT-AIS has also been using English language, and Creole radio programmes to disseminate information to the agricultural communities.

CHAPTER 6

The Mandates of relevant organizations

The CARICOM Secretariat and the UNECLAC Sub-Regional Headquarters for the Caribbean have been implementing information systems in relation to their areas of specialization, and they are expected to work closely in the implementation of this strategy, and in the future on the coordination of the policies relating to regional information systems.

CHAPTER 7

Activities of regional organizations in the development of regional information systems

Several regional organizations including - the UNECLAC Sub-regional Headquarters for Caribbean, the CARICOM Secretariat, the Caribbean Development Bank, The University of the West Indies, The OECS Secretariat, now serve or are expected to serve as the regional and sub-regional focal points for regional information systems which fall within their areas of specialization.

CHAPTER 8

Activities of extra-regional and international organizations in the development of regional information systems

Extra-regional and international organizations have provided technical and financial assistance in the development of the regional information systems. They include the main donor agency The International Development Research Centre (IDRC), as well as Unesco, the Commonwealth Secretariat, the Organization of American States (OAS), the United Nations International Trade Centre (UN ITC) and the World Intellectual Property Organization (WIPO).

CHAPTER 9

Resources

An examination of the human, technological, information, and financial resources now available for the maintenance of the regional information systems demonstrated, a significant improvement over the past decade. There is need, however, for continued national and external support for infrastructural development if the systems are to achieve their stated objectives.

CHAPTER 10

National policies

All member states have discussed the development of national policies and the majority have prepared formal statements on the objectives of developing a national information system for the libraries in the country. These policies do not however cover all areas of the information sector. Details on policies governing participation in regional information systems which had to be gleaned from current activities indicate that participation in the regional systems is in keeping with the policies of the member states.

CHAPTER 11

Mechanisms which facilitate the national and regional information flow

Libraries and documentation centres, statistical services, referral centres, postal services, data and telecommunications facilities, and mass communications media, were considered to be the main means of facilitating the regional and national information flow. Lack of intra-regional data communication facilities is a barrier to the flow of information and it is recommended that the University of the West Indies Distance Teaching Experiment (UWIDITE), and other existing regional facilities be investigated as the basis of a publicly available regional data network.

CHAPTER 12

Proposals

The proposals detailed in chapters 12 and 13 identify the systems which should be linked to prevent unnecessary duplication and to ensure that the data collected can be provided to the users. Proposals are also made for establishing systems for health, the environment, and tourism, and for standardization and compatibility between all the systems.

Further development of the human resources to manage the regional and related national systems is also proposed, both in terms of new training and upgrading of skills to match the requirements of using the new technology, and providing a more vibrant information service.

CHAPTER 13

It is proposed that the linkages of the systems with the national and regional mass media will provide for a wider dissemination of information to the development community.

The establishment of a Regional Network of Information Systems is proposed. This network would be a consultative advisory and monitoring mechanism for regional information systems.

In order that these proposals could be discussed, and adopted by all involved in their implementation, they were discussed initially at a technical meeting of system managers, and other specialists, and subsequently submitted to all the member states and to the next meetings of the Caribbean Development and Cooperation Committee, the CARICOM Ministers responsible for national information systems, and the CARICOM Heads of Government Conference.

Policy monitoring

It is recommended that this be the responsibility of the Network Consultative Committee, which would be composed of the managers of the regional systems, and which would, through regular consultation, determine policies relating to existing and proposed systems.

RECOMMENDATIONS FOR IMPLEMENTATION OF THE STRATEGY

NETWORK MANAGEMENT

Regional information systems for providing access to the information produced in or about the region, should be established or developed in the priority areas of:

AGRICULTURE
BANKING AND FINANCE
DISASTER PREPAREDNESS
EDUCATION
ENERGY
THE ENVIRONMENT
HEALTH
INDUSTRY
LAW
SOCIO-ECONOMIC PLANNING
TRADE
TOURISM
UNEMPLOYMENT

The rationalization of the systems, and the linkages proposed, in the report be used as a guide to eliminate overlap and for determining linkages of related systems.

As the implementation of the policies will require coordination of the activities of these systems, it is recommended that a Caribbean Network of Regional Information Systems be established. The Network should be composed of the existing regional information systems, and others as developed, and the Consultative Committee would determine current and ongoing policies, the boundaries between systems, and the linkages of related existing and proposed systems.

There should be regular consultation between the members of the committee, and the University of the West Indies Distance Teaching Experiment (UWIDITE), should be investigated as a means of communication between the members.

The fact that the regional systems are multi-disciplinary, requires that the strategy be ratified at the highest governmental level. It is therefore recommended that the strategy be presented to the next meetings of the Heads of Government of the Caribbean Community, and to the next meeting of the Caribbean Development and Cooperation Committee (CDCC).

The CARICOM Secretariat and the UNECLAC Sub-regional Headquarters for the Caribbean should be responsible for presenting proposed changes in the strategy to the future meetings of the Heads of Government Conference, and of the Caribbean Development and Cooperation Committee.

The Network should be recognized as the regional link with extra-regional and international agencies. This would encourage the development of the regional systems within a systematically developed strategy.

SYSTEM DESIGN

There should be an overall design for each of the systems proposed. This design should include consultation with member states on the basic structure of the system, their participation, and project proposals for extra-regional funding.

INPUT

As the systems are based on locally produced and locally relevant material, it is also recommended that the member states and regional organizations ensure that their policies of classification and declassification facilitate access to unpublished documents and other data on the results of regional experience and research.

PROCESSING

That the techniques employed for processing the systems' data be selected in relation to current regional practices and facilities, and that these be periodically reviewed in order to take advantage of changing technologies. That common methodologies and input formats be employed for the design and structure of the systems' databases.

Hardware

As the distribution of copies of regional databases to member states will require compatibility of equipment, it is recommended that the equipment used in the micro-computer-based systems be IBM compatible machines for which servicing is locally available.

Software

As the Micro CDS/ISIS software package produced by Unesco is the most appropriate package presently available, it is recommended that this be the software standard for bibliographical databases. As UNECLAC has been designated by Unesco as the regional distribution centre, it should also be requested to continue training staff of the national and regional centres, and to investigate the possibility of data transfer between MINISIS, CDS/ISIS, and OCLC, which should facilitate the participation of the University libraries in the regional systems.

DISSEMINATION OF INFORMATION

Information on the systems

Member states should be made aware of the systems, their structure, services, and local points of access to the systems' resources. The public and private national and regional media should be used to promote the systems. The newsletters of the regional organizations, - CARICOM Perspectives, CDCC Focus, and CARINET should be employed to publicize the systems and their services wherever possible.

Information on the regional information system strategy

The strategy as finally confirmed by the member states should be as widely circulated as possible, within the region as well as to extra-regional and international organizations involved in the development of the regional information systems.

Information held by the systems

Users and potential users need to be aware of the information held by the systems, and it is therefore recommended that updated copies of the regional databases should be available to the national focal points. Printed output should also be distributed to provide backups for the computerized systems.

Repackaging of information

Significant pieces of information, held by the systems should be summarized, analyzed, reviewed and disseminated through the mass media.

Access to external databases

Relevant information produced outside of the region should be made available to users of the region through relevant systems, when the regional databases have been established.

Data communication

It is recommended that a regional data network be established to facilitate communication, and to reduce travel costs between the national and regional focal points of the systems. It is recommended that the feasibility of using UWIDITE and other regional facilities as the basis of this network be further investigated.

NATIONAL POLICIES

The development of national information policies for the information sector will facilitate national development, and will clarify the relationships with regional systems and programmes. There should be regular communication between the national focal points and the regional centres to ensure the implementation of the national policies.

HUMAN RESOURCES

Programmes for the development of information professionals should include training in areas required by the systems. This should include long and short term training in the areas of systems analysis, computer literacy, and the repackaging of information, the languages of the member states, and other subject specializations.

FINANCIAL RESOURCES

Information should be designated a priority area for national budgetary funding and for external technical and financial assistance. Regional agencies should provide assistance at the national level within the framework of the regional system strategy.

Future developments

The above proposals have sought to rationalize the development of the regional information systems with particular emphasis on the aspects the responsiveness of the systems to their constituencies. The mechanisms recommended for implementing these proposals have involved:

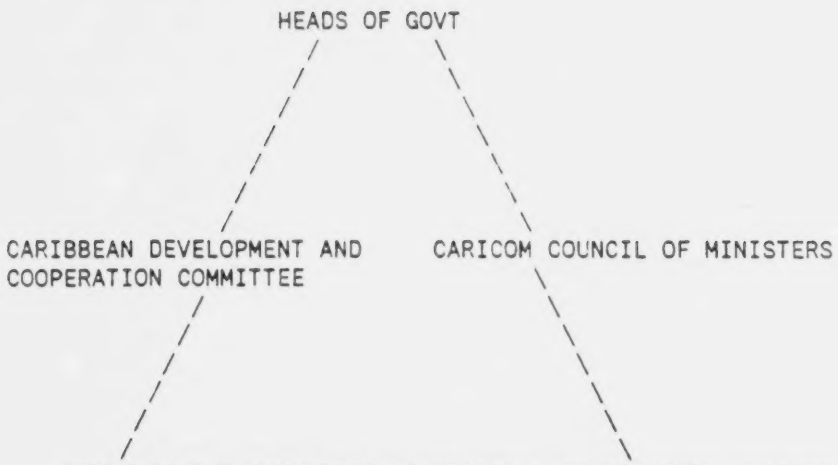
Initial review by a meeting of the systems' managers, and other technical experts

Circulation of the proposals to all member states

Submission to meetings of the:

Caribbean Development and Cooperation Committee
Heads of Government Conference of the Caribbean Community.

The acceptance by the above groupings of ministers is expected to provide the Mandate for implementation of the strategy, and therefore ensure its availability as the framework governing the regional information systems to the year 2000.



A PROPOSED FRAMEWORK
FOR THE DEVELOPMENT OF THE REGIONAL INFORMATION SYSTEM
STRATEGY

RECOMMENDED
CARIBBEAN NETWORK OF REGIONAL INFORMATION SYSTEMS

SECTOR	TYPE OF DATA
MULTI-SECTORAL	Biblio Textual Quant Repakg Mass Media links OECS INFONET (providing linkages with the regional information systems)

RECOMMENDED SYSTEMS

SECTOR	TYPE OF DATA
	Biblio Textual Quant Repakg Mass Media links
ALL SECTORS	*CARSTIN RESEARCH DATABASE (to be established in conjunction with the regional focal points)
AGRICULTURE	----CAGRIS---------- CARDI ---------- *MARINE SCIENCE *CAMIS | ----------| *CARSTIN | -----ACT----------| *ANIMAL DISEASE
TRADE	CARTIS CARTIS CARTIS ----------

RECOMMENDED
CARIBBEAN NETWORK OF REGIONAL INFORMATION SYSTEMS

SECTOR	TYPE OF DATA				
	Biblio	Textual	Quant	Repakg	Mass Media links
SOCIO-ECON	CARISPLAN	CARISPLAN			
INDUSTRY	CARPIN			CARPIN CTCS	
ENERGY	CEIS	CEIS	CEIS		
HEALTH	*CARICOM/PAHO		CAREC		
EDUCATION					
DISASTER PREPAREDNESS					
LAW	*REGIONAL LEG *MARINE LAW				

* SYSTEMS PROPOSED FOR IMPLEMENTATION

REGIONAL PRIORITY AREAS RECOMMENDED FOR DEVELOPMENT
OF REGIONAL INFORMATION SYSTEMS

ENVIRONMENT	
TOURISM	
UNEMPLOYMENT	
CULTURE	

Development of repackaging services and linkages with CANA other regional mass media, and the national mass media is recommended for all regional information systems.

Abbreviations for TYPES OF DATA

Biblio Bibliographical
Quant Quantitative
Repakg Repackaging

INFORMATION SYSTEMS FOR PRODUCTION, MANAGEMENT, POLICY MAKING, AND RESEARCH WITHIN THE CONTEXT OF CARIBBEAN DEVELOPMENT

CHAPTER 1

BACKGROUND

1. These policy proposals which have resulted from consultations with the Member states, and with the relevant regional and international organizations have identified suitable courses of action for:

- Maximizing the returns and benefits from regional information systems
- Creating a framework, as the basis for systematic improvements and/or development of new systems and services
- Ensuring that the services of these systems will indeed be directed to improving the welfare of the ultimate beneficiaries, the population of the region

2. The descriptions of the regional information systems all indicate a common goal of:

- providing information which can reach the ultimate users, the population of the region, can be channeled into productive innovation, and consequently promote development .
- sharing of regional information and experience among the Member states.
- assisting Member states in the development of their national focal points, and participating centres, and consequently the improvement of their national information services.

3. Since the beginning of the 1970's there have been several initiatives for establishing regional information systems serving various levels and types of users. As the systems all serve most of the same Member States, it is crucial that:

- the systems should be compatible
- that overlap be eliminated or at least reduced
- that the methodologies and functions be standardized to achieve maximum accessibility and

- that there should be national and regional referral services to provide effective keys for accessing the system.

4. There are also gaps in the types of services and the levels at which the services are provided, and the policy proposals have therefore identified a common goal for these systems, and consequently determined areas in which other types of and additional services will be required.

5. As the regional systems continue to work within the framework of their Mandates, an analysis of the relevant information policy issues therefore involved an examination of:

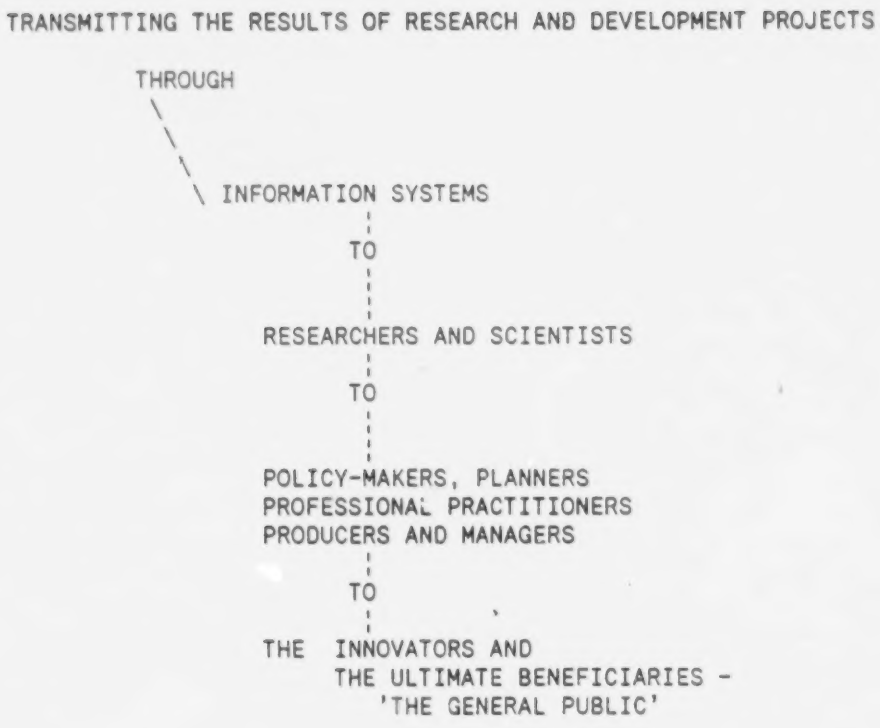
- The mandates for the creation of the systems
- The role of the systems in the development process
- The information environments in which the systems exist
- The users and beneficiaries identified
- The type of data input to the systems
- The impact of the systems' products and services on the beneficiaries.

6. In addition to the existing regional information systems there are also systems which have been proposed or are in the process of development. These regional systems while designed within the general objective of improving regional cooperation and development, require coordination and an overall policy framework which is in line with national priorities, and which can deliver services appropriate to national information requirements.

7. Agencies responsible for managing systems, and external agencies which provide assistance to the region, will need some guiding principles for the direction of the systems, and the desirable characteristics for their development.

8. In some cases the impact of the systems can be strengthened by modification of the form in which the output is delivered. In all cases the mechanisms used to facilitate national and regional information flow, will need to be augmented to ensure more effective information transfer.

9. As information is not an end in itself, the ultimate goal of these information handling activities must be the harnessing of the resources of the information systems of the region into outputs which advance the regional development process. The 'Ultimate Goal' can therefore be described as:


TRANSMITTING THE RESULTS OF RESEARCH AND DEVELOPMENT PROJECTS
THROUGH
INFORMATION SYSTEMS
TO
RESEARCHERS AND SCIENTISTS
TO
POLICY-MAKERS, PLANNERS
PROFESSIONAL PRACTITIONERS
PRODUCERS AND MANAGERS
TO
THE INNOVATORS AND
THE ULTIMATE BENEFICIARIES -
'THE GENERAL PUBLIC'

INFORMATION IN THE CONTEXT OF CARIBBEAN DEVELOPMENT

10. Informatics - the rational and systematic application of all types of information and information services: data, bibliographical information and information technology to economic, social and political problems - was the main thrust of this analysis. Information in these policy proposals therefore relates to all the development sectors, and the information systems reviewed, and analyzed consequently includes systems in the areas of:

AGRICULTURE
EDUCATION
ENERGY
INDUSTRY
SOCIO-ECONOMIC PLANNING
TRADE

11. These systems are being developed within the information sector, an increasingly multi-disciplinary sector which gradually is being super-imposed on the other development sectors. The information sector is here defined as being composed of statistical data services, libraries, and other bibliographical information services, and communication facilities, with the service organizations being facilitated in the provision of information by various aspects of information technologies.

12. According to its application, information provided by the regional information systems falls into the following categories:

- Information for problem-solving and decision-making
- Information as an input to applied technological research
- Information as an input to socio-economic development
- Information as an input to the development of enterprises.

The definition of "Information" in the Organization for Economic Cooperation and Development's review of National - Science and Technology Information Policy - Canada - relates to:

"all data concerning the present state, progress, or results of research and development, and concerning the use of such results together with all other applicable data which might be used in technical or research and developmental activities."

(OECD Review of National Science and Technology Information Policy - Canada)

This seems to be the most appropriate definition in the context of the regional information systems.

13. This definition was therefore used to guide the initial analysis of information as required for development, - as provided by information facilities in the Caribbean. It will therefore consider, the interactive process of information provision through information handlers or information practitioners including:

librarians
documentalists
information analysts

whose work is facilitated by :

systems analysts
statisticians
mass media personnel
telecommunications personnel
computer scientists
subject specialists

and others involved in the collection, processing and dissemination of information.

14. The processes involved in the provision of information include:

- The assessment of information needs of an individual, organization or population group
- Determination of optimal ways to fill such needs
- Assistance to clients in information use
- Assurance of systematic follow-up and feedback to permit evaluation of the effectiveness of information services
- Assessment of the output of the system on behalf of the end user, or organization or group of formal information systems, support networks, and human resource networks.

15. These activities are all accomplished within the information sector which includes sources of information, presented in various formats. Services are also provided, and as a result of the information activities in which the users of information and the information agents interact, the satisfaction of the user is achieved.

THE INFORMATION SECTOR

INFORMATION SOURCES

TYPES OF INFORMATION

Quantitative Information	Bibliographical Information Textual information	Communication

INFORMATION FACILITIES

Statistical Services Data collection and analysis centres	Libraries Documentation centres Information analysis centres Referral centres Clearinghouses Archives	Mass communications services Postal services Tele-communications services Data communications services

INFORMATION ACTIVITIES

Information production
  Primary information
    Publishing
  Secondary information
    Analysis
  Transaction information
Information brokerage
Registration and protection of intellectual property
Information use
  User education
Marketing of information services

INFORMATION AGENTS

Statisticians Data analysts	Information handlers and managers	Communicators Translators

INFORMATION USERS

INFORMATION AS A PROCESS

16. Information is useful only if accessible to the users and potential users, and therefore the basic objective of all information systems, as originally proposed by Ranganathan, is to provide:

THE RIGHT INFORMATION
TO THE RIGHT USER
AT THE RIGHT TIME

17. Information as a process is closely related to the innovation process - a sub-process of development. The basic functions of information provision can therefore be related to the various activities of research, development, and innovation which take place in the development process within the Caribbean.

18. The transfer of information between researcher and development planner and innovator is a process which is ongoing with or without the input of 'Development Information Systems'. It is expected, however, that the formal information systems facilitate more efficient information transfer required for innovation, and can therefore free the technical personnel to carry out their developmental activities, rather than engaging in some of the time-consuming activities of searching for information.

19. The successful transfer of knowledge from the information system to the innovation process can be partly measured in terms of the services provided to those responsible for research and development activities. On the other hand the successful transfer of information as an input to the development process is not always clearly definable. There is need for the managers of the information systems to monitor and evaluate the systems' activities in order to determine the influence of the information sub-system on the advancement of the various areas of the innovation process.

20. The collection and analysis of data on the activities, of the information systems, should provide the required feedback on their performance, and on the accomplishments of the systems in meeting the goals defined earlier.

THE POLICY-MAKING PROCESS - PUBLIC POLICY AND INFORMATION POLICY

21. As information production, transfer and use are multi-disciplinary, and multi-sectoral activities, policies governing their direction, and development are likely to be public policies. In the Caribbean, this factor is perhaps more influential, than elsewhere, as such a large percentage of the information sector is the

responsibility of government. Public policy can be considered equivalent to government strategy, and to a pattern of action that resolves competing claims, and in some situations provides incentives for cooperation.

22. Although it is expected that those who share common goals would in fact undertake common action, it is recognized that the various means of reaching a common goal might lead to a variety of actions, and therefore public policies will be required to determine the most suitable types of governmental, private, and public actions which should be undertaken in the development of the regional information systems, to ensure that the common and "Ultimate Goal" is eventually achieved.

INFORMATION POLICY

23. The major goals of information policy as a component of public policy can be stated as:

- Ensuring the effective utilization of accumulated knowledge in science and technology, social sciences, and all other areas of the development sciences, in order to achieve national objectives for the betterment of society.

- Promoting the use of development science information for development.

- Ensuring the availability of adequate information for decision-making, management, and policy-making both in the public and private sectors.

- Focussing the attention of governments and private organizations on the value of information availability and use.

OECD 1977

24. It may be expected that a regional information policy, in further defining the related objectives, can provide a definitive course or method of action, to which participating organizations can subscribe, and that these policies, selected from among the alternatives, can guide future decisions and actions.

25. The definition of a strategy for the development of the regional information systems will be influenced by:

- the needs of the users - immediate users and ultimate beneficiaries
- existing information policies - national or regional
- the information infrastructure
- the availability of:

  information facilities and resources appropriate
  information technology
  human resources
  financial resources

This strategy incorporates the issues outlined in the current Unesco guidelines for the development of national information policy, as it discusses the relevant policy issues in relation to the development of specific information systems and programmes.

26. The development of an information strategy for the Caribbean involves the coordination of national development policies relating to information by:

- Determination of relevant government actions and proposals, and plans
- Determination of areas of common interest in information development in the region
- Determination of areas of coordination required for the successful expansion and development of regional information systems.

27. The above factors might be modified as national and regional development takes place, but in order to ensure that the actions agreed to in the determination of the regional policy can in fact be implemented, the policy objectives should be incorporated into national and regional planning mechanisms. Provision for implementing the policy proposals, should be given a clearly demarcated role in the future planning of the information sector.

28. Within the context of the goals of the existing and proposed information systems, and current and expected resources, it is proposed that the policy development process adopt the basic strategy of:

- Coordination of present activities
- Identification of additional services required
- Recognition of existing services requiring further enhancement

- Definition of initiatives which should be encouraged at the national and regional levels

- Definition of the roles of governments

- Evaluation of the roles of regional and international organizations

29. The information systems will be expected to support the current activities for the solution of the regional problems - of which the most notable is:

The need for sustained economic and social development.

Several regional research projects and studies have shown that some of the current economic and social problems can be attributed to:

- Lack of appropriate technological information

and

- An inappropriate pattern of technological change.

30. These research findings have been particularly demonstrated by the results of the two Caribbean Technology Policy Studies Projects which were undertaken by the University of the West Indies and the University of Guyana between 1974/5 and 1983/4.

31. The policies established by the Member states to govern the activities of the regional organizations:

- The United Nations Economic Commission for Latin America and the Caribbean (UNECLAC) (as the Secretariat for the Caribbean Development and Cooperation Committee (CDCC))

- The Caribbean Community (CARICOM) Secretariat

- The Caribbean Development Bank (CDB)

- The Organization of Eastern Caribbean States (OECS)

- The University of the West Indies (UWI)

all subscribe to the concept that the:

"large pockets of chronic poverty, in both urban and rural areas, endemic unemployment, and deficiencies in basic amenities, continue to characterize the lot of the region's population .. and that there are no spontaneous forces which will lead to any substantial improvement in the current situation." Regional activities have therefore focussed on "a commitment on the part of Member States to practice at one and the same time self-reliance at the national and regional levels in order to fulfil their development objectives." (Group of Caribbean Experts 1981)

32. Girvan (1983) in analyzing the results of the studies completed under the Caribbean Technology Policy project, also identifies the need for solving regional problems through the linkage of the various levels of developmental activities, and further indicates the need for the availability of appropriate technological information at each level.

33. The information systems which have been put in place since the establishment of The Caribbean Information System - Economic and Social Planning Sector (CARISPLAN), the first sector of the Caribbean Information System, in 1979, have provided some solutions to the problems of an incomplete information transfer cycle within the region, and have now begun to make available appropriate technological information.

34. There are, however, gaps in the information transfer cycle - the process of transfer of information:

- from the producers of information - including researchers
- through editors and publishers
- through various types of information centres, libraries, clearinghouses, and data centres
- through information analysis centres
- through tertiary services for the evaluation, abstracting, and re-packaging of information
- to the various types of users active in the development process in the region.

The policy proposals identify the gaps in the information transfer cycle, areas for further expansion and development, of the existing regional systems, and new systems which should be established in priority development areas.

THE GEOGRAPHICAL AREA

CHAPTER 2

35. This analysis will be concerned with the Member states of the Caribbean Development and Cooperation Committee (CDCC). Member states are represented by Ministers of Foreign Affairs, on this committee, which determines the policy directions of the United Nations Economic Commission for Latin America and the Caribbean (UNECLAC), as regards the Caribbean.

36. This grouping was established in 1976 and provides policy advisory services to the Member States. The CDCC has also requested the establishment of some operational services including information systems in the areas of socio-economic information for planning, patents, and agriculture.

37. The Member states of the CDCC are:

1. ANTIGUA AND BARBUDA
2 ARUBA
3. THE BAHAMAS
4. BARBADOS
5. BELIZE
6. THE BRITISH VIRGIN ISLANDS
7. CUBA
8. DOMINICA
9. THE DOMINICAN REPUBLIC
10. GRENADA
11. GUYANA
12. HAITI
13. JAMAICA
14. MONTSERRAT
15. THE NETHERLANDS ANTILLES
16. SAINT LUCIA
17. ST KITTS - NEVIS
18. ST VINCENT AND THE GRENADINES
19. SURINAME
20. TRINIDAD AND TOBAGO
21. THE US VIRGIN ISLANDS

38. This grouping includes the membership of the Caribbean Community (CARICOM), most of the membership of the Caribbean Development Bank (CDB), and most of the membership of the Organization of Eastern Caribbean States (OECS) as listed below:

39.

	CARICOM		OECS		The Caribbean states of the CDB *
1	ANTIGUA AND BARBUDA	1	ANGUILLA	1	ANGUILLA
2	THE BAHAMAS	2	ANTIGUA AND BARBUDA	2	ANTIGUA AND BARBUDA
3	BARBADOS	3	BRITISH VIRGIN ISLANDS	3	THE BAHAMAS
4	BELIZE	4	DOMINICA	4	BARBADOS
5	DOMINICA	5	GRENADA	5	BELIZE
6	GRENADA	6	MONTSERRAT	6	BRITISH VIRGIN ISLANDS
7	GUYANA	7	SAINT LUCIA	7	CAYMAN ISLANDS
8	JAMAICA	8	ST CHRISTOPHER-NEVIS	8	DOMINICA
9	MONTSERRAT	9	ST VINCENT AND THE GRENADINES	9	GRENADA
10	SAINT LUCIA			10	GUYANA
11	ST KITTS - NEVIS			11	JAMAICA
12	ST VINCENT AND THE GRENADINES			12	MONTSERRAT
13	TRINIDAD AND TOBAGO			13	SAINT LUCIA
				14	ST KITTS - NEVIS
				15	ST VINCENT AND THE GRENADINES
				16	TURKS AND CAICOS IS
				17	TRINIDAD AND TOBAGO

* NOTE: The Caribbean Development Bank (CDB) includes extra-regional countries (not listed here) in its membership.

40. The Caribbean Community (CARICOM), the Organization of Eastern Caribbean States (OECS), and the Caribbean Development Bank, (CDB) are also involved in regional development, and are therefore groupings which have been mandated by the states of the region to implement regional scientific and technological information systems.

41. As stated earlier the CDCC membership includes most of the membership of the other major regional organizations, and therefore the geographical area for the study consists of the English-speaking Caribbean, Cuba, Haiti, the Dominican Republic, Suriname, The Netherlands Antilles, and Aruba.

42. Examination of the geographical coverage of the regional information systems has shown that The Caribbean Information System for Economic and Social Planning (CARISPLAN) is the only system which is indeed operational in all the Member states of the CDCC. The other systems, although designed for expansion of membership as they develop, are operating within or are proposed for initial operation within the CARICOM countries. There are general expectations of geographical expansion of the systems, but there are, as yet, no timetables for expanding the services.

PRIORITY SECTORS IN CARIBBEAN DEVELOPMENTAL ACTIVITIES

CHAPTER 3

43. At various stages during the past decade, the Member states of the Caribbean Development and Co-operation Committee (CDCC), the Caribbean Community (CARICOM), the Caribbean Development Bank (CDB), and the Organization of Eastern Caribbean States (OECS), have defined the following areas as priority sectors for development.

AGRICULTURE
The highest priority has been accorded to Agriculture, and the related activities, the production of various commodities, and the related processing and agro-industrial development.

INDUSTRY
Industrial production of manufactured products from local and imported raw materials, is another priority area.

ENERGY
The availability of new and renewable energy sources is expected to provide much needed support to the agricultural and industrial sector.

TRADE
Intra and extra-regional trade in local products is also expected to be able to provide for access to markets for the products of the agricultural and industrial sector.

TOURISM
This area of trade is of particular importance to all the Member states of the CDCC.

SOCIO-ECONOMIC FACTORS have been recognized as having significant influence on the development of the region, and consequently in addition to Socio-economic planning which has been established as a priority area, there are the other areas of the Environment, Public Health and Preventive Medicine, Education, and Disaster Preparedness, and Unemployment, which are all being treated as areas of significant importance.

44. The desire of the regional governments to have access to information in these areas, not only for government planning and policy-making, but also for assisting all sectors of their economies in development and innovation, has been evidenced in decisions taken by intergovernmental bodies such as:

- The Caribbean Development and Co-operation Committee (CDCC)
- The Caribbean Community (CARICOM)
- The Caribbean Development Bank (CDB)
- The Organization of Eastern Caribbean States (CECS).

45. Information services consequently have been developed or are being planned at the national and regional levels by:

- The Caribbean Community Secretariat (CARICOM)
- The Organization of Eastern Caribbean States (OECS)
- The United Nations Economic Commission for Latin America and the Caribbean (UNECLAC)
- The University of the West Indies (implementing a decision of the CDCC).
- The Scientific Research Council of Jamaica (implementing a decision of Caribbean Member states).

46. In addition to the systems developed by the inter-governmental organizations, systems have been also been developed in these priority areas by non-governmental regional organizations such as:

the Caribbean Association of Industry and Commerce (CAIC)
and
the Association for Caribbean Transformation (ACT)

which function in the areas of business and agriculture, respectively.

47. The information sector and related industry which is now in the process of being developed in the Caribbean area are not yet recognized in the national development policies and plans. Planning of industrial development of this sector is still therefore at an embryonic stage. The developments taking place in the various areas of the information sector do seem to indicate a trend toward further development of the information industry, and the need for the rationalization of the inter-connections between the various components of the sector as outlined above.

USERS' NEEDS AND SERVICES REQUIRED FROM THE REGIONAL INFORMATION SYSTEMS

CHAPTER 4

48. The regional information systems which have been developed in response to the Mandates of the regional intergovernmental organizations and to the requirements of the membership of the non-governmental organizations, have established information dissemination programmes in accordance with the needs identified by the systems.

49. Awareness of some of the multiplicity of information needs has resulted from the studies of information users which were initiated during the planning and design of the national information systems and its specialized sectors. To determine how appropriate these measures have been, it seems necessary to look initially at the multiplicity of information needs and consequently at the desirable characteristics of information systems in relation to the services which are required:

- the systems should be aware of the users' needs through periodical user studies and regular updating of these studies.

- the information provided through the regional systems should be available to the users through the national focal points and other sources of information in their countries

- the output of the information systems should be disseminated in a form which will permit it to be interpreted and used by the various levels of users in the Caribbean

- the services of the systems should be disseminated through mechanisms which incorporate the technical developments in place in the region

- the performance of the systems would be evaluated by ongoing monitoring and assessment.

50. From the users' point of view this will sometimes require:

- the interpretation of technical data and information into non-specialist language,

and in other cases there will be need for:

- the combination of technical data with information from other fields to make the output of the system really meaningful to the users.

51. The size of the Caribbean area and its limited resources, seem to make special demands on regional information systems. Whereas in other geographical areas resources might permit several levels of systems within a particular discipline, in the Caribbean there is need to ensure that information collected, and processed by the systems is appropriately disseminated and can in fact be used by the various levels of the systems' publics.

52. In general the systems have been mandated to serve a user population composed of:

- Politicians, and senior managers who function as policy-makers
- Planners functioning as advisers to policy-makers
- Administrators and managers of the public and private sectors
- Technical personnel from the public and private sectors
- Researchers from the universities as well as from the research departments of public and private corporations
- Educators
- The implementors:
  farmers
  artisans
  manufacturers
  entrepreneurs.

53. The information required by the types of users is likely to be available in all or several of the information systems. In addition to the fact that the information systems might need to expand their coverage of the particular disciplines or sectors beyond the mainly bibliographical services currently provided, there have indeed been successful initiatives to provide services to the regional users. These users while having common needs for information, can for convenience, be sub-divided into the following categories:

54. Policy-makers

There is evidently a need for technical information to assist the regional policy-makers in forecasting the economic, political and social consequences of their choices and alternatives in decision-making. This information resulting from applied research, from evaluation projects undertaken by local and external technocrats, and from the reports of developmental and infrastaructural projects, will need to be summarized, and packaged in forms which would make information quickly accessible to, and usable by policy-makers.

55. Administrators and managers

These users need information to aid them in decision-making within their areas of responsibility. Their information needs are perhaps more clearly defined, and less subject to change than those of the policy-makers. Administrators and managers are equally likely to need specific information, in their area of interest, which will need to be summarized and in some cases, re-packaged in order to ensure that the output of the information services can be quickly assimilated.

56. Technical personnel

Professionals and other practitioners in all fields and at various levels also have expectations of the systems. Where systems exist to meet their needs, these users have been making demands on the information services. Apart from the need to be kept up to date on new technical developments in their fields, these users' needs are usually very specific, and they regularly require information services within very tight time constraints. Although the information is usually provided to specialists, there is often the need to provide information on topics which might be new to the user, or which might be outside his or her main area of specialization.

57. This can be illustrated by an example of the need for information on energy economics, by agriculturalists, or for information on the economic aspects of a particular crop by agricultural scientists. This type of requirement will be often found among users of technical information and re-packaged information will therefore be required in relation to the problems encountered by farmers, artisans, fishermen, industrial workers, and others engaged in ongoing development activities.

58. Researchers

This is perhaps the only group of the information users which will not require re-packaged information in their particular field. In this case the systems will be required to provide summaries and other document surrogates which will permit the researcher to determine the value of the particular item of information. These information needs are often very specialized but they tend to be longer-term needs than those of the earlier user categories.

59. The 'Public'

One of the major justifications for the regional information systems is the fact that this information can eventually be incorporated into the development process. The dissemination of information to policy-makers, planners, researchers, and technical personnel is indeed a valid part of the development process, but should be related to the dissemination of information to the other members of the community, - the farmers, the entrepreneurs, the exporters, and other potential innovators.

60. Suitably packaged information is therefore required as an output of the regional information systems, in an effort to meet the information needs of the majority of information users.

SERVICES OF THE REGIONAL INFORMATION SYSTEMS

61. The regional information systems have been providing services through information centres serving as regional focal points. The studies of the national economies and related developmental activities have provided guidelines to locally relevant data, and locally relevant results, as well as regionally relevant research and data. The systems have mainly been dealing with bibliographical information on the assumption that a great deal of relevant data and evaluations of this data can be located in books, journals reports and other documents. This assumption is indeed valid and there should therefore be a bibliographical aspect of each regional system as there is the danger of re-inventing the wheel, through lack of access to documented regional experience.

62. The establishment of databases containing quantitative data is the next requirement which would ensure that the data not currently documented can also be provided by the information systems. This requirement for current data would where possible, demand the linking of the information system to the sources of data, rather than creating new systems to collect manipulate and disseminate data which might be held in existing databases.

63. Priority has been and should continue to be given to the collection, processing and dissemination of original data, and research produced in and or relevant to the Caribbean and to the priority sectors. Much of this information is found in published and unpublished documents held by libraries and information centres, and in some cases in organizations producing and generating information.

64. A concern at this point in the development of the regional information systems should be the dissemination of the information collected and processed by the systems, and that potentially available to the systems.

DISSEMINATION OF INFORMATION

65. The function of disseminating information is one which requires action on several levels:

- Dissemination of information from the regional centres to the national centres

- Dissemination of information from the regional centres to the national users

- Dissemination of information from the national centres to the national users.

66. As indicated earlier, information will be required at the national level on very specific topics, and on occasion at very short notice. There is therefore need for local availability of the regional databases, and where necessary, access, by national and regional users to external sources of information either directly or through the regional systems.

OPERATIONS OF THE REGIONAL SYSTEMS

67. The regional focal point will therefore be responsible for regional information transfer, will aim to undertake common services from which all members of the system can benefit, and will therefore undertake activities for the establishment and maintenance of the system which will reduce the burden on the national focal points.

68. Initial training and subsequent updatings in relation to system techniques and methodologies, and the use of new technologies, should also be provided by the regional focal points.

REGIONAL INFORMATION SYSTEMS AND PROGRAMMES

CHAPTER 5

69. Regional information systems have been initiated in the Caribbean with the general objectives of:

- Providing information to aid in decision-making
- Providing information for research and development
- Providing re-packaged technical information (e.g. agricultural information to farmers or, information for small business operations) as inputs to innovation, and development activities
- Supporting scientific and technological research in areas of regional interest.

70. This review of the existing and planned systems, initially identifies desirable characteristics of such systems, and then examines the activities of the regional systems in relation to the following criteria.

Desirable characteristics:

71. Initial consultation with Member states on the system's objectives, priorities, design, and modus operandi.

72. The existence of an organization active in its field to serve as a regional focal point. The regional focal point responsible for the establishment and development of each system should be an agency active in the development of the selected field, and should be in the normal course of its duties responsible for the collection processing and dissemination of information. It would therefore have the responsibility for encouraging regional information transfer, and for assisting the national focal points to develop their services.

73. Recognition of the information use environment. Each information system needs to be responsive to a particular environment - (Taylor 1986). These regional systems have as their particular environment, the economies of the Member States, and their users and potential users are:

policy-makers	teachers
planners	students
technical personnel	exporters
researchers	farmers

and the general public of the Caribbean.

74. Study of the information use environment. To be effectively designed, the systems need to study the environment in which the users function (Taylor 1986.) This initial study then serves to provide information to the systems on:

The users problems
The users information needs
long-term
short-term
The professional patterns in the environment
Organizational styles demonstrated by the environment

75. Human resources

The development of national focal points adequately staffed with information specialists will permit the development of truly regional systems.

76. Input

The study of the information use environment, the resulting needs assessment and the ongoing monitoring of information needs will be the principal determinant of the types of information to be input to the systems. This should be clearly defined at an early stage of the systems design.

77. As the systems aim to capture the local data, and relevant evaluations of these data, important inputs will be information on research and development activities, and information resulting from research projects of the universities and other agencies active in regional research. Factors which will influence the input will include:

- The subject priorities
- The linkage of sources and information gathering mechanisms
- The availability of transmission facilities
- The cost of locating and acquiring the data for input.

78. Information infrastructure

The personnel of each regional system - managers and participating information specialists, should undertake a study of the relevant system infrastructure to determine resources available to the systems and those required for the development of national focal points, participating centres, and consequent services.

79. Methodologies

Appropriate methodologies for the system's operation should be outlined, as they will influence the evaluation and selection of relevant information technologies to be employed.

80. System compatibility

Each regional system should be compatible with national and other regional systems, and should be capable of interconnection with these systems. Use of standardized methodologies particularly for computerized systems would facilitate initial compatibility, and subsequent interconnection.

81. International compatibility while very desirable, should not result in the loss of access by users in the region, and it is recommended that regional requirements for compatibility should take precedence over the international requirements.

82. Pilot project

A pilot project for testing and feedback from the national focal points and participating centres should be initiated in the early stages of the system to ensure that the products and services provided do indeed meet the users needs.

83. Implementation

This should be based on systematic:

INPUT OF DATA - bibliographic and non-bibliographic - from the regional focal points, as well as all national focal points and participating centres - through established information gathering mechanisms

PROCESSING OF DATA to meet the needs of users as identified earlier.

OUTPUT OF PRODUCTS AND SERVICES. These products and services will be provided in formats relevant to the users needs, and as permitted by the methodologies identified earlier and by the technologies available.

84. Outputs

The outputs of the regional systems should include the processed results of all inputs. They should be:

timely - and therefore available when required by the users

current - as information which is outdated depreciates and can be misleading

accurate - as it is the systems' responsibility
credible to ensure that the information disseminated by the systems has been obtained from reliable sources.

and packaged and presented in terms relevant to the user. The above assume that the systems will provide the user with access to the database, to document surrogates, and to the actual documents.

85. The Value added by the information systems

The activities of system development described earlier should result in the addition by the information system of value to the basic data which was input.

86. Costs of system development

Financial assistance for the initial development of the regional systems has provided very valuable support for establishing initial services to the region. The draft project proposals for extra-budgetary funding should be circulated to all Member states to ensure that there is consensus on the areas identified for funding. To ensure continuation of the systems at least cost to the implementing organizations, the system design should provide for the implementation of essential services while eliminating inessential features and activities.

87. Ownership and copyright of the systems databases

The products of the systems will increase in value as the systems develop and the ownership, and copyright of the databases produced by the regional system should be safeguarded through the registration of the printed and computerized products for copyright, and through other security measures which can prevent unauthorized access to the system databases, and particularly to the material which might be of restricted distribution.

88. Marketing of the systems' products and services

Although the systems have been put in place and are gradually being developed, one important factor has not been adequately recognized: communication with the user, in terms of marketing of the information systems, their products and services.

89. The use of the mass communication services of the governments, and other national and regional organizations will reach a much larger number of users than has been possible through the conventional means of dissemination of information through current awareness services. The dissemination activities should also utilize the national focal points as channels of information, and should be regular and effective.

BEST COPY AVAILABLE

90. User education

Users will also require details of information services available, and special programs for training information users, should be built into each system's activities to assist the users to make more effective use of the services available from the regional systems.

91. Management of the systems

The Management of the system will require a means of ensuring that the policies of the systems are maintained and implemented. A policy making committee composed of representatives of:

- The national focal points
- The Universities
- The Professional associations
- The Users
- The Regional focal point

would be able to ensure that the objectives of the systems have indeed been maintained in the process of execution.

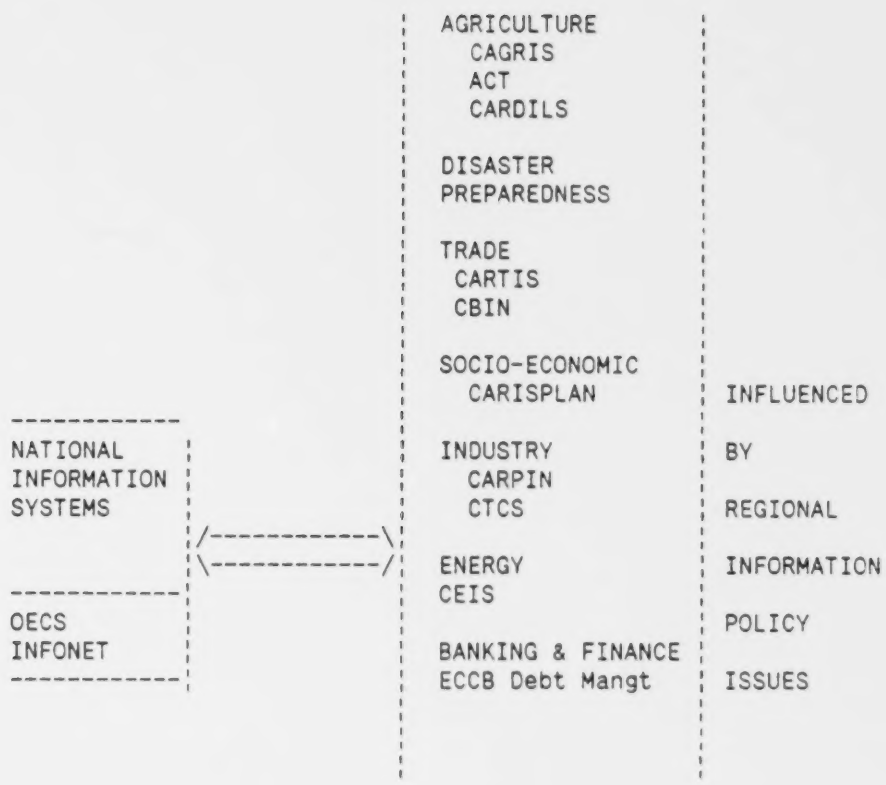
92. Evaluation

In addition to the feedback from users which will be received through the policy-monitoring committee, there will also be need for feedback on the effects of the system on the users and potential users. This is best done by monitoring user satisfaction and maintaining statistical data on types of users and their interaction with the system.

GENERAL OBJECTIVES OF REGIONAL SYSTEMS

93. In their design, the regional information systems have been assigned a major role in the transfer of information within the region. By the nature of the information which the systems manipulate, they can also be seen as having the potential for also playing a significant role in technology transfer.

94. Regional information systems have been established in several areas, others have been designed, and tested, and have received funding for their operational activities. There are also systems which have been proposed, and are to be designed and implemented when funding is available. These systems have therefore been examined in terms of their objectives, potential for overlap, and linkages required with other systems.



REGIONAL INFORMATION SYSTEMS FOR THE CARIBBEAN AREA
CURRENTLY EXISTING OR DESIGNED

REGIONAL INFORMATION SYSTEMS
EXISTING AND PROPOSED

ALL SECTORS

CARIBBEAN NETWORK FOR THE EXCHANGE OF INFORMATION AND EXPERIENCE IN SCIENCE AND TECHNOLOGY (CARSTIN) *Database of research in progress, specialists, and specialist organizations

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AGRICULTURE

THE CARIBBEAN INFORMATION SYSTEM FOR THE AGRICULTURAL SCIENCES (CAGRIS)

THE CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE LITERATURE SERVICE (CARDILS)

*FISHERIES INFORMATION SYSTEM

*CARIBBEAN MARKET INTELLIGENCE SYSTEM (CAMIS)

THE ASSOCIATION FOR CARIBBEAN TRANSFORMATION (ACT) AGRICULTURAL INFORMATION SYSTEM (AIS)

* CARSTIN MARINE SCIENCE INFORMATION SYSTEM

TRADE

THE CARIBBEAN TRADE INFORMATION SYSTEM (CARTIS)

THE CARIBBEAN BASIN INFORMATION NETWORK (CBIN)

*CARSTIN MARKET INTELLIGENCE SYSTEM

SOCIO ECONOMIC PLANNING

CARIBBEAN INFORMATION SYSTEM FOR ECONOMIC AND SOCIAL PLANNING (CARISPLAN)

INDUSTRY

CARIBBEAN PATENTS INFORMATION SYSTEM (CARPIN)
CARIBBEAN TECHNOLOGICAL CONSULTANCY SERVICE (CTCS)
*CARSTIN TECHNOLOGY TRANSFER SUPPORT INFORMATION SYSTEM
*CARSTIN INFORMATION SYSTEM FOR SMALL-SCALE INDUSTRY

ENERGY

CARIBBEAN ENERGY INFORMATION SYSTEM (CEIS)

BANKING AND FINANCE

EASTERN CARIBBEAN CENTRAL BANK DEBT MANAGEMENT RECORDING SYSTEM

HEALTH

*HEALTH INFORMATION SYSTEM

EDUCATION

*CARNEID INFORMATION SYSTEM

DISASTER PREPAREDNESS

DISASTER PREPAREDNESS INFORMATION SYSTEM

LAW

*MARINE LEGISLATION
*REGIONAL LEGAL INFORMATION SYSTEM

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* SYSTEMS PROPOSED FOR IMPLEMENTATION

95. THE CARIBBEAN INFORMATION SYSTEM - ECONOMIC AND SOCIAL PLANNING - CARISPLAN. 1979 -

Objectives: The collection, processing and dissemination of information relevant to socio-economic planning in the region.

The Caribbean Documentation Centre of the United Nations Economic Commission for Latin America and the Caribbean (UNECLAC) was requested by the Member States of the CDCC, to establish an information network linking the libraries /documentation centres of their national planning agencies, and other organizations working in the area of socio-economic development.

Users: Policy-makers, planners, technical personnel, and researchers, of the Member States Services: Current Awareness Services, Selective Dissemination of Information, Abstracting and Indexing services, Reference Services provided mainly from a database covering Caribbean and other relevant documents.

96. THE CARIBBEAN INFORMATION SYSTEM FOR THE AGRICULTURAL SCIENCES (CAGRIS). 1985 -

Objectives: The collection, processing and dissemination of information relevant to agricultural development in the region.

The University of the West Indies, St Augustine, Trinidad, was requested by the Caribbean Development and Cooperation Committee, to establish an information network linking the University of the West Indies Library (St. Augustine) to the libraries of the agricultural organizations of Member States.

Users: Policy-makers, planners, agriculturalists and researchers, farmers and other agricultural practitioners of Member States.

Services: Current awareness services, Selective Dissemination of Information, Abstracting and Indexing Services, and Reference Services from a database covering agricultural documents on and relevant to the Caribbean.

97. THE CARIBBEAN INFORMATION SYSTEM - PATENTS - CARPIN. 1985

Objectives: The collection, processing and dissemination of information relating to patents registered in the Member States. The Caribbean Documentation Centre of the United Nations Economic Commission for Latin America and the Caribbean was requested by the Caribbean Development and Cooperation Committee to establish an information system for the collection, processing and dissemination of information on patents registered in the region.

Users: Technologists and planners of industrial development.

Services: Reference services from a database covering patents registered in Member States.

98. THE CARIBBEAN TRADE INFORMATION SYSTEM (CARTIS). 1986 -

Objectives: The establishment of a regional trade information network to support the development of intra- and extra-regional trade.

The Caribbean Community (CARICOM) Secretariat was requested by the CARICOM Council of Ministers to establish a regional trade information system initially linking the CARICOM Member States, and subsequently the other CDCC Member States.

Users: Exporters and exporting organizations, Trade promotion agencies, importers/investors, researchers, Ministries of trade/commerce.

Services: Dissemination of trade information from databases covering company profiles, market opportunities, suppliers' profiles, trade documents, trade statistics.

99. THE CARIBBEAN ENERGY INFORMATION SYSTEM (currently in the planning stages)

Objectives: To implement one aspect of the Regional Energy Action Plan and to facilitate the sharing of information on new and renewable sources of energy in the Caribbean region.

Users: Policy-makers, planners and technical personnel in the Member States.

Services: Dissemination of information relating to new and renewable sources of energy in the Caribbean region.

100. THE CARIBBEAN NETWORK FOR EDUCATION AND INNOVATION? - CARNEID (currently in the planning stages).

Objectives: The development of an information network linking the educational institutions in the region - initially those of the English-speaking states.

The system will be established by Unesco through its regional office in Barbados.

Users: Educational planners, policy-makers, researchers, and practitioners of the region.

101. THE HEALTH INFORMATION NETWORK (currently in the planning stages).

Objective: The collection, processing, and dissemination on information on public health and medicine.

This network is expected to, and to include statistical data, as well as bibliographical information services to the Member States.

Users: Medical and public health planners, researchers, and practitioners of the Member States.

102. THE ASSOCIATION FOR CARIBBEAN TRANSFORMATION (ACT). 1982 -

Objectives: Collection, processing, analysis, and dissemination of statistical data on agricultural products and prices.

This network has been developed by the Association for Caribbean Transformation and initially links information units in Trinidad, Antigua, Dominica.

Users: Farmers and other distributors of agricultural products.

103. THE DISASTER PREPAREDNESS INFORMATION NETWORK. 1982 -

Objectives: The collection, processing and dissemination of information on long-and short term methods of preparing for disasters. An important factor being dissemination through the most appropriate channels, and forms of language.

The regional Disaster Preparedness Office was requested by CARICOM Member States to establish an information network linking the regional office to the national Disaster Preparedness Offices.

Users: All levels of the populations of the region.

Services: Dissemination of all types of information to all areas of the population, using all available facilitating mechanisms.

104. THE CARIBBEAN TECHNOLOGY CONSULTANCY SERVICE - CTCS. 1984-85

Objectives: To provide an information service for the implementation of technologies in developmental activities in the region.

The Caribbean Development Bank was requested to establish the system providing services to users on request.

Users: Practitioners working in all areas where technologies are implemented.

105. THE CARIBBEAN AGRICULTURAL DEVELOPMENT INSTITUTE INFORMATION NETWORK - CARDI

Objectives: The collection, processing and dissemination of information in areas relevant to the cropping systems, and to the other research activities of the Institute.

The network links the national offices of CARDI which serve as points for dissemination of information.

Users: Farmers and other agriculturalists.

Services: Current awareness, and Selective Dissemination of information services from an institutional database, and through access to several external databases.

106. THE CARIBBEAN BASIN INFORMATION NETWORK - CBIN

Objectives: The dissemination of information relevant to the Caribbean business community and to the trading partners in the North America.

The network provides linkages between the Caribbean Chamber of Industry and Commerce, the national Chambers of Industry and Commerce, and the CBIN centre in Washington D.C.

Users: The Caribbean business community.

107. THE SHIPPING INFORMATION SYSTEM FOR THE CARIBBEAN (currently in the planning stages).

Objectives: The collection, processing, analysis and dissemination of statistical data relevant to the shipping activities of the region.

The CARICOM Secretariat has been requested to establish this system to provide shipping information services to Member States

Users: Policy-makers, planners, and technical personnel of public and private agencies in the region.

108. INTERNATIONAL REFERRAL SYSTEM FOR ENVIRONMENTAL INFORMATION (includes Caribbean focal points). - ENVIRONMENTAL INFORMATION

Objectives: Providing access to sources of environmental information.

The system links the Caribbean national focal points for INFOTERRA with each other and with the global system.

Users: Policy-makers, planners, and technical personnel working in areas related to environmental development.

SUB-REGIONAL SYSTEMS

109. THE ORGANIZATION OF EASTERN CARIBBEAN STATES INFORMATION NETWORK (OECS) (currently in the planning stages).

Objectives: To provide a facilitating mechanism for the flow of information between the Member States of the OECS, the OECS Secretariat, and with the other regional information systems. This system is expected to ensure that users have access to the documents held in the libraries, and documentation centres of this regional grouping.

The OECS Secretariat will be responsible for the establishment and maintenance of the system.

Users: Policy-makers, planners and technical personnel of the OECS Member States.

MANDATES OF REGIONAL AND INTERNATIONAL ORGANIZATIONS FOR INFORMATION ACTIVITIES IN THE CARIBBEAN AREA

CHAPTER 6

110. The implementation of the various initiatives for the development of regional information systems has been undertaken under the leadership of regional organizations. The membership of these organizations includes the countries forming the Caribbean Development and Cooperation Committee (CDCC) and the other English-speaking countries of the Caribbean. These regional organizations have been established by the Member States for the purpose of carrying out priority developmental activities which are of value to the region as a whole.

111. The organizations have been established along geographical lines, or along those of sectoral interests, such as Agriculture, Trade, Tourism etc. The mandates of these organizations provide for various activities which can encourage economic and social development. They permit the provision of special services to the region, and proposals for the development of sectoral information systems have been submitted to the governing councils of the relevant organizations for approval.

112. To prevent overlap of programmes, the Secretariats of the regional organizations are expected by their Member States and governing councils to clarify their exact areas of operation through discussion of the common areas of their work programmes, before submission for ratification.

113. As the governing councils consist of representatives of the Member States, approval by these councils, of initial system design, and of related implementation, signifies approval by the Member states, and each regional or international organization is therefore permitted to undertake future activities for the development of the system with regular progress reports to the organization's governing council.

114. Because of the inter-disciplinary nature of information, and its linkages to the related sectoral activities, the development of the regional information systems has involved several regional organizations, and the demarcation of programmes has involved inter-organizational discussions.

115. The selection of regional organizations to serve as the regional focal points for the information systems in the Caribbean area, has mainly been on the basis of the main sectoral thrust of the organization's activities.

116. The following organizations have been mainly involved in the development of regional information systems in the past decade:

117. The United Nations Economic Commission for Latin America and the

Caribbean (UNECLAC) Sub-regional Headquarters for the Caribbean.

UNECLAC, the organization responsible for executing the decisions of the Caribbean Development and Cooperation Committee (CDCC) since 1976, received a general mandate from the CDCC to:

- Assist in the economic and social development of the member states of the CDCC

- Implement functions relating to the promotion and strengthening of technical and economic cooperation among its member states and between them and other developing countries

This office therefore functions as one of the regional agencies involved in development and cooperation activities in the region, and consequently in the development of regional information systems through technical cooperation among member states.

118. The UNECLAC Sub-regional Headquarters for the Caribbean was mandated in 1978 by the CDCC to establish the Caribbean Information System which would provide information to policy makers and planners and to technical personnel of the Member states. This System was to be established by sectors with coordinating mechanisms to ensure compatibility and to facilitate access by users. The initial design of the system was based on the results of the 1977 Meeting on Regional Co-operation for Access to information in the Caribbean.

119. The Economic and Social Planning Sector - CARISPLAN was established in 1979, with the Systems for Agriculture (CAGRIS), and for Patents (CARPIN) subsequently established in 1985. The CDCC requested that the UNECLAC Sub-regional Headquarters for the Caribbean to seek funding and to provide technical assistance for the participation of Member States in the regional information systems, and similarly encourage the development of other sectoral systems which would be executed by appropriate organizations with regional responsibilities.

120. The Caribbean Community (CARICOM) Secretariat. The Caribbean Community which includes the 13 Commonwealth Caribbean Member states, of the CDCC has been given the principal responsibility of establishing a viable means of integration among Member States, with trade being the function of major importance. The Community, through the Secretariat, has also been required to undertake various activities of functional cooperation. The coordination of these activities has also been seen as an important activity for the CARICOM Secretariat.

121. In implementing the particular clause of the Treaty Establishing the Caribbean Community, which requires the Secretariat to undertake:
"The efficient operation of certain common services and activities for the benefit of its peoples".

The Secretariat is in the process of establishing certain common services including the regional Trade Information System (CARTIS). The Secretariat has also been mandated by the CARICOM Council of Ministers to establish information systems in the areas of:

Transport
Health
Market Intelligence

122. The Heads of Government Conference as the major governing body of the Caribbean Community, gives final approval for the establishment of the information systems which are to be implemented by the Secretariat. Coordination with other relevant regional institutions is effected by representation at the meetings of the governing councils, and by distribution of the reports, of the institutional activities.

123. The CARICOM Secretariat, and the UNECLAC Sub-regional Headquarters for the Caribbean, as the Secretariat for the CDCC have similar mandates for the development of programmes, and of information systems. There is consequently need for close collaboration to prevent duplication and overlap, and to ensure that the region's requirements for developmental activities are indeed met.

124. Membership

The similarity of the mandates covers initially the membership, as the CDCC consists of all the independent member states of the Caribbean, and the Caribbean Community includes most of the English-speaking Caribbean, with provision for the participation of "any other countries of the Caribbean Area" in particular programmes.

125. Functions

While both organizations have broad emphasis on economic development included in their mandates, the Treaty establishing the Caribbean Community which requires the CARICOM Secretariat to "establish a viable means of economic integration" and the "efficient operation of certain common services and activities for the benefit of the peoples of the region " places a significant emphasis on trade integration.

126. The UNECLAC Sub-regional Headquarters for the Caribbean has on the other hand been mandated to provide support for the development activities of the region and therefore undertakes projects aimed at providing assistance to the programmes of the Member states.

127. The Caribbean Development Bank (CDB)

The Borrowing Members of the CDB are the seventeen Caribbean English - speaking countries. The Bank's Mandate requires it to perform development banking as well as development agency functions. Provision of technical assistance is a major aspect of the latter function and the Caribbean Technological Consultancy Service (CTCS) Network is the principal mechanism by which the Bank responds to short

Network is the principal mechanism by which the Bank responds to short term technical assistance needs of industrial enterprises. Established in 1984, following a two-year pilot project, CTCS' main focus is technological problem solving and technology transfer. Longer-term technical assistance is provided under the CDB's regular programmes for sectoral studies, pre-investment studies, institutional development, and other activities. Some of these such as the CDB/ITC Export Promotion project impact on the development of information resources, and create databases which can be accessed through the CTCS Network.

128. Office of the Unesco Regional Adviser in Science and Technology

This Office has been assigned the responsibility for carrying out Unesco's Science and Technology in the Region, and has in the area of information undertaken the responsibility for the development of the CARSTIN project - a project which is was mandated by the Ministers responsible for Science and Technology of the Caribbean region, which requested:

> "the establishment of a regional technological information network."

The countries participating in CARSTIN are the English- speaking Caribbean with Suriname and the Netherlands Antilles, and the general mandate for information activities overlaps with those of the CARICOM Secretariat, and of the UNECLAC Sub-regional Headquarters for the Caribbean.

129. Activities of the CARSTIN project are monitored and ratified by biannual consultation meetings of CARSTIN liaison officers from Member states, and representatives of regional organizations.

130. Organization of Eastern Caribbean States (OECS) Secretariat

The Treaty establishing the OECS, mandates the Secretariat to execute programmes providing common services to member states. Information services can therefore be logically included among such services, and the OECS INFONET which has been designed and approved by member states is a network which will provide a facilitating mechanism for providing access to the holdings of the national documentation centres of the OECS Member States.

131. The major objective of the programmes of the OECS Secretariat is the increase of the capabilities of Member states to undertake other development activities. In the area of information therefore, there has been emphasis on infrastructure development and resource sharing.

132. Although all the above organizations have overlapping memberships, and programmes with potential for overlap, there are existing mechanisms for consultation and analysis to ensure that the programmes and projects which are finally executed are indeed effectively linked and are compatible. At present there is inadequate communication

consequently some duplication and ineffective linkages could result.

133. The available mechanisms for alleviating these deficiencies should be utilized in order to ensure that the relationships between the programmes can be clearly defined and that linkages which are established can serve to maximize the benefits from the regional systems.

134. In addition to effective communication between the regional organizations, the execution of the mandates at the national level can be made more effective by recognition of the information sector as a unified entity, and by official recognition of all the stated national information policies and national information systems.

135. Global information systems

There are also international agencies which have mandates for the development of global information systems which would include the Caribbean countries. The regional strategy proposes that these organizations continue to work with the Member States, within the framework of the regional systems, and through the regional organizations which have appropriate mandates.

ACTIVITIES OF REGIONAL ORGANIZATIONS WHICH INFLUENCE THE DEVELOPMENT OF REGIONAL INFORMATION POLICIES

CHAPTER 7

136. In response to the mandates from member states, the regional organizations have undertaken several levels of information activities, and have consequently influenced the development of regional information policies.

137. These activities have had a common goal of regional development and providing access to locally relevant information. They have included:

1 - The development and coordination of regional information policies

2 - The development and coordination of technological policies relevant to the development of national and regional information systems

3 - Establishment of linkages with international organizations

4 - Establishment and development of regional information systems

5 - Support of national information systems, particularly in relation to their participation in regional systems

6 - Development and implementation of standards relevant to development of regional and national information systems

7 - Delivery of information services to organizations and individuals at the national and regional levels

8 - Training in the use of systems methodologies at the regional and national levels

9 - Training in the use of hardware and software systems required for the development of regional information systems and for the development of national focal points

10- Identification of and negotiation for technical and economic assistance for the development of regional and national information systems

11- Supervision of the development of regional information systems executed by other national or other regional agencies on their behalf

138. Analysis of these activities have revealed the achievement of extremely innovative results, and consequently significant improvements in information services in the region, the level of awareness of information users at the level of policy makers, planners and researchers, and the degree of information infrastructure which is being provided by member states, and by external agencies.

139. These activities have demonstrated, however, the absence of an overall strategy or game plan for the development of these systems in the next decade, and consequently there are gaps in the development of policies and failure to recognize important activities required to support the future development of information systems. A further examination of the role of regional organizations is therefore required to identify the priority activities to be undertaken, in relation to the present and future needs of the national users.

THE UNITED NATIONS ECONOMIC COMMISSION FOR LATIN AMERICA. (UNECLAC)
Sub-regional Headquarters for the Caribbean

140. The UNECLAC Sub-regional Headquarters for the Caribbean, has been the organization most active in the development of regional information systems, and the corresponding activities. An analysis of its activities in relation to those listed above, has identified the following:

141. The coordination and development of regional information policies

At the request of the Member States of the CDCC, the UNECLAC Sub-regional Headquarters for the Caribbean, began the development of the Caribbean Information System which involved the development in stages of sectoral information systems, to be implemented either by the UNECLAC Sub-regional Headquarters for the Caribbean, or by other regional or national agencies within the framework of the Caribbean Information System. The resulting development of CARISPLAN, CARPIN, and CAGRIS have required some determination of policies governing the common objectives, and functional compatibility of these regional systems.

142. The development and coordination of technological policies relevant to the development of national and regional information systems

Technological policies have also been determined by UNECLAC. The determination of system methodologies in relation to the development of the regional information systems have influenced the policies adopted by national and regional systems.

143. Provision of linkages with international organizations

The UNECLAC Sub-regional Headquarters for the Caribbean has also facilitated the activities of international organizations which need to work through regional organizations. This has been the case in the participation of WIPO in the CARPIN, Unesco, in CARSTIN, to a lesser extent the FAO in CAGRIS.

144. Establishment and development of regional information systems

The UNECLAC Sub-regional Headquarters for the Caribbean, initiated the development of The Caribbean Information System with sectoral developments in the areas of Socio-Economic Planning - CARISPLAN, Patents - CARPIN, Agriculture - CAGRIS.

145. Support of national information systems, particularly in relation to their participation in regional systems

In the development of CARISPLAN the UNECLAC Sub-regional Headquarters for the Caribbean, with the assistance of IDRC provided technical assistance for the development of the national focal points, and in some cases assisted in the development of the national information systems. CARPIN, and CAGRIS were subsequently able to build on the earlier initiatives, and have continued to provide further support and training in information handling and information use.

146. Development and implementation of standards relevant to regional and national information systems

The standardization of methodologies employed by regional systems was established partly in relation to international standards, and partly in relation to the availability of hardware, and software for establishing the CARISPLAN database. Efforts were made, in conjunction with Unesco, to establish a common format for the then existing regional databases through the Dierickx report (1981) and subsequently through the study by Beckles and Creasy (1985).

147. Delivery of information services to organizations and individuals at the national and regional levels

In the development of its earliest system - CARISPLAN, the UNECLAC Caribbean Documentation Centre established a regional database of bibliographic data, as the basis for providing current awareness services, retrospective searches on request, and selective dissemination of information at the national and regional levels. The other two systems established subsequently by UNECLAC, are in the process of providing all these services.

148. Training in the use of the systems methodologies at the regional and national levels

Training has been provided by all the UNECLAC systems. This was initially through meetings and seminars for librarians, and other information handlers, and in addition seminars were also conducted for end users of the system.

149. Training in the use of hardware and software systems for the development of regional information development of national focal points

This requirement has mainly become relevant in the past two years with the transfer of the CARISPLAN database to the Sub-regional Headquarters for the Caribbean and the availability from Unesco of the Micro CDS/ISIS software package for the computerization of the national focal points. The UNECLAC Sub-regional Headquarters for the Caribbean, as the regional distributor for the software package, has mounted training seminars with the assistance of IDRC and Unesco and these have been very valuable in training librarians in the use of this microcomputer system.

150. Identification of and negotiation for technical and economic assistance for the development of regional and national information systems

UNECLAC has been very active in seeking funding for the development of the three sectoral systems established under the Caribbean Information System, and as a result extra-budgetary funding, has been provided to the UNECLAC Sub-regional Headquarters for the Caribbean, the University of the West Indies, and the Member States, by IDRC, WIPO, Unesco.

151. Supervision of the development of regional information systems executed by other national or other regional agencies on their behalf

The University of the West Indies Library at St. Augustine, Trinidad, was requested to execute CAGRIS, within the framework of the Caribbean Information System, and under the general supervision of the UNECLAC Sub-regional Headquarters for the Caribbean. The University is therefore expected to define its scheme of operations within the context of the Caribbean Information System, and to present periodical reports to the CDCC through the Caribbean Documentation Centre of the UNECLAC Sub-regional Headquarters for the Caribbean.

THE CARIBBEAN COMMUNITY (CARICOM) SECRETARIAT

152. The CARICOM Secretariat has also been involved in the development of regional information systems, and an analysis of the Secretariat's activities shows influences on information policy in the following areas:

153. The development and coordination of regional information policies

The CARICOM Secretariat was responsible for the earliest initiatives for the development of regional information infrastructure. The 1974 Mandate from the Heads of Government requested the Secretariat to identify areas for the development of libraries in the region, and to assist in their development. The study of the existing situation, and relevant recommendations was followed by the development with the assistance of Unesco of national information policies and systems for some of the Member States. the 1983 Mandate from the CARICOM Council of Ministers for the development and coordination of regional information policies, and a programme executed in 1983/1984 with the assistance of UNDP, provided some assistance for the development of the national information systems.

154. The development and coordination of technological policies relevant to the development of national and regional information systems

In the establishment of the Caribbean Trade Information System and the corresponding regional databases, the hardware and software systems used will establish de facto policies, which will influence the subsequent employment of methodologies, hardware and software in the region. The Trade Information System is expected to use the CARISPLAN methodologies for the development of the bibliographic database, but has developed in conjunction with the International Trade Centre (ITC), methodologies for the textual and quantitative databases.

155. Linkages with international organizations

The Secretariat has facilitated the regional operations of the ITC through a joint project, has cooperated with Unesco, for the development of CARSTIN and with PAHO in relation to the Health Information System which is under discussion.

156. Establishment and development of regional information systems

As trade is the main area of emphasis of the Caribbean Community, the Secretariat proposes to concentrate its efforts on the development of CARTIS, and the Caribbean Agricultural Marketing Information System (CAMIS) which is currently being designed.

157. Support of national information systems, particularly in relation to their participation in regional systems

As CARTIS will require rapid collection and dissemination of current information to national users, there has been significant emphasis in the design of the system on the development and support of national focal points by Member States, and by funding provided through the regional systems. Similar support through CAMIS is proposed.

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158. Development and implementation of standards relevant to development of regional and national information systems

CARTIS as it is being developed will establish standards within the regional system. The importance of functional compatibility with the other regional systems, has been recognized.

159. Delivery of information services to organizations and individuals at the national and regional levels

CARTIS is expected to be a system with a large number of users - manufacturers, importers and exporters, and consequently the design of the system has made provision for the establishment of mechanisms for collecting and disseminating information to users at the national and regional levels.

160. Training in the use of systems methodologies at the regional and national levels

Training of users and information handlers is included in the design of CARTIS, and this is to be undertaken as the system develops.

161. Training in the use of hardware and software systems required for the development of regional information systems and for the development of national focal points

This aspect of CARTIS has begun on the basis of a pilot project for the testing of the design of the quantitative database in two of the Member States.

162. Identification of and negotiation for technical and economic assistance for the development of regional and national information systems

The CARICOM Secretariat has begun to do this within the context of the development of CARTIS. Funding for initiating CARTIS was provided by IDRC, UNDP and ITC at the request of the Secretariat. Assistance sought for the future development of the system is for the national and regional levels.

163. Supervision of the development of regional information systems executed by other national or other regional agencies on their behalf

The Secretariat has not yet requested the execution of information systems by other agencies, but it expected that these would be supervised by the Secretariat to ensure that regional policies are maintained.

THE ORGANIZATION OF EASTERN CARIBBEAN STATES (OECS)

164. The network of national documentation centres - OECS INFONET which has recently been approved by the OECS member states, provides a mechanism for the development of the human and technical resources of the national documentation centres of the OECS member states, and of the OECS Secretariat. This network will also facilitate the participation of the OECS member states in the regional systems.

165. The UNECLAC Sub-regional Headquarters for the Caribbean, the CARICOM Secretariat and Unesco are the organizations which have been mainly influential in the development of regional information policies, while the OECS is in the process of undertaking sub-regional activities which will impact on regional information policies. The other regional organizations which have been mainly involved in the operational aspect of information systems, have, however, influenced various aspects of regional information policies as they developed.

THE CARIBBEAN DEVELOPMENT BANK (CDB)

166. The CDB in the development of the Caribbean Technological Consultancy Service (CTCS), undertook the following activities of those outlined above:

167. Establishment and development of regional information systems
The CTCS as a regional system, emphasizes the importance of the specialist human intermediary in the delivery of information services.

168. Delivery of information services to organizations and individuals at the national and regional levels In executing the CTCS the CDB has also placed emphasis on the delivery to appropriate information services, and on repackaging appropriate to the user. The role of the human intermediary is more in evidence here than in the other systems.

THE CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE (CARDI)

CARDI also undertook the operational activities of:

169. Establishment and development of regional information systems
This specialized literature service which covers CARDI's areas of research also acquired relevant information from external sources.

170. Delivery of information services to organizations and individuals at the national and regional levels CARDI provides services to the CARDI staff and to other research and development personnel in Member states.

THE ASSOCIATION FOR CARIBBEAN TRANSFORMATION (ACT)

171. Establishment and development of regional information systems
While the development of ACT AIS has been in the operational rather than policy-making area, the method of a pilot project using three countries - Trinidad and Tobago, Antigua, and Dominica as the basis for initiating the services, is a departure from the other systems which because of the organizations' mandates have attempted to include all member states initially.

172. Delivery of information services to organizations and individuals at the national and regional levels
The services of ACT AIS have been aimed particularly at decision-makers in the agricultural sector, farmers, and traders.

THE PAN-CARIBBEAN DISASTER PREPAREDNESS ORGANIZATION

173. This regional organization has been involved mainly at the operational level in the development and a regional information system, and delivery of services. Its operations also influence the development of technological policies, and the policies relating to the linkages between collection, processing, repackaging dissemination, and use of technical information.

174. Establishment and development of regional information systems
All the Member States participate in the collection and dissemination of information relating to disasters.

175. Delivery of information services to organizations and individuals at the national and regional levels
Emphasis has been placed on the delivery of current, timely information to users. Dissemination is through the media, and in a form in which it can be most effectively assimilated.

CARIBBEAN ASSOCIATION OF INDUSTRY AND COMMERCE (CAIC)

176. This network, The Caribbean Basin Information Network (CBIN) emphasizes the dissemination of business data from external sources.

177. Establishment and development of regional information systems

This system can be seen as regional in the sense that it disseminates information required by the region rather than disseminating information produced in or relating to the region.

178. Delivery of information services to organizations and individuals at the national and regional levels

The system delivers information to manufacturers, and other individuals and agencies through the national Chambers of Commerce which serve as the national focal points.

THE UNIVERSITY OF THE WEST INDIES (UWI)

179. In addition to the development of CAGRIS as a programme of the CDCC, the UWI is also in the process of developing a regional information system for law and legislation. This is expected to link the Law Faculty Library to the legal departments of the CARICOM member states.

TECHNICAL AND ECONOMIC ASSISTANCE

180. Identification of and negotiation for technical and economic assistance for the development of regional and national information systems

As the availability of external funding has played a significant role in the development of regional information systems, and to a lesser extent the participation of national focal points, the identification of possible sources of funding has been part of the responsibility of the each of the regional systems as they have developed.

181. The majority of the funding which has been sought from and provided by IDRC with additional technical and financial support from UNDP through Unesco and through regional agencies, from the regular budget of Unesco, from other UN agencies, and from the Commonwealth Fund for Technical Cooperation (CFTC), WIPO and the OAS.

182. The activities of the regional organizations described above have resulted in several achievements, increased awareness in the region of the value of information and information services, and increased use of information by policy-makers, planners, and technical personnel of the Member states. This has been particularly evident in the use of CARISPLAN which as the earliest system has been used by several types of users requiring unpublished documents about the region.

183. The improvements in infrastructure, human resources and system development have increased the absorptive capacity of the Member states, and should enable them to undertake the development of systems in the future.

184. These improvements have not, however, completely overcome the problems of time and distance which exist in decentralized regional information systems, and future developments will require more timely and current outputs from the systems to ensure that the systems do indeed play an effective role in the development of the region.

185. The lack of linkages of the systems also indicate that the users will experience difficulty in obtaining information without provision for coordinated access to the databases of the various systems which are logically related.

ACTIVITIES OF EXTRA-REGIONAL AND INTERNATIONAL ORGANIZATIONS IN THE DEVELOPMENT OF REGIONAL INFORMATION SYSTEMS AND PROGRAMMES

CHAPTER 8

186. The determination of a regional information system strategy for the previous decade would have been greatly influenced by the activities of extra-regional and international organizations. These influences have taken the form of consultants' studies and reports on the national and regional information systems, regional linkages to global information systems, technical assistance and financial assistance within a particular project framework.

187. The design and development of regional information systems have all been assisted by extra-regional agencies, and the present and future policies and activities of these agencies will influence the determination of a strategy for the next decade.

THE INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC)

188. IDRC has in the past ten years, been the external agency most involved in the development of regional information systems, and in the related national programmes. This support has been at several levels, and while initially provided for bibliographical information and related information infrastructure, was subsequently expanded to include other regional data in textual or quantitative format, as well as repackaged data, disseminated through mass communication services.

189. The information systems supported by IDRC have included:

- Organizational information systems which have regional responsibilities and which also function within regional information systems;

- National information systems with regional relationships;

- National computerized information networks which can relate to regional systems, and can also demonstrate the value of particular tools and methods to the region;

- National focal points which are members of regional information systems;

- Decentralized regional information systems, with regional and national focal points.

190. The programmes supported by IDRC, and the corresponding programme management have encouraged the rationalized planning and co-ordination of regional systems.

191. IDRC's support was initially provided for regional bibliographical information systems in the development sciences, but recognition of the range of information needs of the users has led to support of integrated information systems providing logical inter-system linkages between different types of information as in the cases of the CEIS and CARTIS which each integrate bibliographical, quantitative and textual data into one system.

192. Innovative programmes such as the use of satellite remote sensing for the acquisition of quantitative data serve to provide the data required, and to demonstrate to the region applications of information tools and methods.

193. IDRC has more recently begun providing assistance for the development of textual information systems in the region. Of particular interest is the Debt Management Recording System which is to be established by the East Caribbean Central Bank (ECCB) with joint funding from IDRC and the Commonwealth Fund for Technical Cooperation (CFTC).

194. One of the apparent advantages of IDRC's operations has been the technical assistance and advisory services provided in addition to the provision of economic assistance. This has proven very beneficial in the management of projects for the establishment of regional and national networks, and in the implementation of new technologies.

195. Long and short-term training related to the development of projects and programmes has facilitated the education and training of information personnel, and has increased the availability of human resources.

196. Regional information systems supported by IDRC

Support for regional systems placed emphasis on the sharing of regional resources, and the intra-regional transfer of information.

197. SOCIO-ECONOMIC INFORMATION

CARISPLAN, the earliest system developed has been supported since 1979 by IDRC. In addition to funding for the development of the regional centre and for training and technical assistance in the Member states, participation in the regional system was facilitated by assistance in the development of national information systems as in the case of Jamaica, Barbados, and Dominica, and of national documentation centres as in the case of Grenada and St. Vincent.

198. The first phase of CARISPLAN permitted the initial establishment of the regional focal point, some of the national focal points, and long and short-term training of information personnel and users.

199. The second phase facilitated the computerization of the regional centre and one national focal point. This included the availability of IDRC's MINISIS software, hardware in the form of a Hewlett Packard 3000/37 minicomputer, and microcomputers for the regional centre, and for the CARISPLAN national focal point in Trinidad and Tobago. This phase of the project permitted the establishment of CARPIN as the regional information system for patents.

200. AGRICULTURE

CAGRIS was developed with the assistance of IDRC as the main bibliographical information system in agriculture. This followed previous support for the national participation in AGRINTER, and the first phase has facilitated the development of the regional centre, and has provided assistance for the development of the national focal points.

201. Assistance by IDRC to a research institute - CARDI and to a private non-profit organization ACT has encouraged the linkages of bibliographical, and quantitative information systems, as well as the availability of the results of a pilot project for further development of information services in agricultural marketing by the CARICOM Secretariat. Funding for the initial design of CAMIS is also being provided by IDRC.

202. TRADE

The importance of intra-regional trade as a high priority in the region has been accepted by IDRC, and in addition to the funding for the ACT Agricultural Information System, and for the Production and Marketing Information System (CAMIS), CARTIS has also been supported at the preliminary design stage, for consultation with the Member States, and in the testing of the database.

203. INDUSTRY

An expansion of information services to include information transfer through gatekeepers, as information intermediaries, resulted in the establishment of the Caribbean Technological Consultancy Service (CTCS), which like ACT AIS, CARTIS, CAMIS provide the facilities of the information system for solving problems related to development in the region.

204. ENERGY

Another integrated information system, the CEIS, which has recently been funded is expected to address the regional problem of providing appropriate energy sources, and of determining appropriate petroleum policies.

205. BANKING AND FINANCE

The Regional Debt Management Recording System established at the East Caribbean Central Bank again demonstrates an application of information to solving practical problems, and the joint support by IDRC and CFTC will permit a more effective management of the Bank's debt payments.

206. MULTI-SECTORAL INFORMATION NETWORKS

The Caribbean Information System - a network, proposed by the CDCC for the development of information systems in priority areas, provided the framework for the support of the regional information systems by IDRC. While the individual systems have been individually supported, the development of a coordinating network, is now being discussed within the context of these proposals for a regional information system strategy.

207. One of the most recently funded projects is the OECS INFCNET which was requested by the OECS Member states to provide information suport for national development activities, while sharing common facilities.

209. National information systems

JAMAICA

IDRC in the first phase of its assistance to Jamaica, provided funding to the National Library of Jamaica to help it adapt to its new role in the National Information System, and to help establish the documentation centre of the National Planning Agency (now the Planning Institute of Jamaica) as the national focal point for the Socio-economic Information Network (SECIN).

210. The second phase enabled the National Council in Libraries, Archives and Documentation Services (NACOLADS), to continue, prepare a second plan for the Second Phase of the national information network, and to continue the development of the Scientific and Technological Information Network (STIN).

211. BARBADOS

Barbados was also assisted in the establishment of the Central Directorate which would coordinate the development of the Barbados Library and Information Network (BLAIN), now the National Library Service.

212. DOMINICA

As the strengthening of its national information system was of great concern to the Government of Dominica, IDRC provided assistance for the development of the National Documentation Centre as the coordinating centre for the National Information System.

213. CUBA

The request from Cuba for computerization of the national information system resulted in a recent project which is expected to demonstrate the feasibility and appropriateness of decentralized micro-computer-based information systems using LAN technology for information management. This project is being executed within Cuba's national Scientific and Technological Information System.

214. Regional information system strategy

IDRC has also demonstrated recognition of the need for a coordinated regional information policy, as a framework for the future development of regional information systems, and related national developments. The Centre has therefore funded the joint UNECLAC/CARICOM exercise for the initial study and consultation with Member states, and the technical meeting to discuss the consultant's report.

THE UNITED NATIONS EDUCATIONAL SCIENTIFIC AND CULTURAL ORGANIZATION (Unesco)

215. Unesco through the Office of its Regional Adviser in Science and Technology and through various regional organizations, has provided support for regional information activities, particularly the Caribbean Network for the Exchange of Information and Experience in Science and Technology (CARSTIN). The CARSTIN network has been established under Unesco's auspices, and there has been technical assistance and infrastructural support for regional information activities.

216. Unesco has provided technical assistance for the development of policy proposals in areas of information systems development and information technology. This has been undertaken through consultants' studies, and related recommendations in the areas of : publishing, manpower development, computerized information systems, referral centres, and computer conferencing.

217. Unesco's activities have also influenced technological policies particularly in the area of software and hardware for the development of bibliographical information systems. The availability of the microcomputer version of CDS/ISIS will permit the development of bibliographical databases in the national and regional focal points of the regional systems. Unesco has also facilitated the training of information specialists in the use of MINI-MICRO CDS/ISIS, which is now being used in some regional and national focal points.

218. The Office of the Unesco Regional Adviser in Science and Technology is the main link with Unesco Headquarters, and Unesco has also established linkages with UNDP and specialized agencies in relation to funding of regional information programmes.

219. Unesco has supported the establishment and development of regional information systems, initially providing technical assistance to UNECLAC and more recently collaborating in the design and establishment of the Caribbean Energy Information System.

220. Initial support for the preparation of national information plans was provided by Unesco to several countries in the region, and these have serve as the framework for the development of the national information systems. In addition some equipment and training have been provided under the Unesco's Action Plan for the Coordinated Development of National Information Systems.

221. Unesco has sought economic assistance for the development of national and regional information systems, and this is expected to continue as the systems develop.

THE COMMONWEALTH SECRETARIAT

222. The Commonwealth Science Council has provided support for the CEIS which has recently been designed and funded and which is now to be a regional project funded jointly with IDRC, and the Science and Technology Division of Unesco.

223. The Commonwealth Fund for Technical Cooperation has also jointly supported with IDRC the establishment of the Regional Debt Management Recording system at the East Caribbean Central Bank.

THE ORGANIZATION OF AMERICAN STATES (OAS)

224. The OAS has been involved particularly in the development of human resources in the region, and has provided long and medium term training for librarians from the national systems. This has facilitated the upgrading of skills of library and information professionals, particularly in relation to the use of new information technologies.

225. Assistance has also been provided in the area of scientific and technological information, for projects relating to the development of technological information services.

WORLD INTELLECTUAL PROPERTY ORGANIZATION (WIPO)

226. WIPO has been mainly responsible for the technical assistance required to process the patents at the regional centre, and to assist the national focal points in processing the national patents in force since 1962.

THE INTERNATIONAL TRADE CENTRE (ITC)

227. The ITC collaborated with the CARICOM Secretariat, in the execution of the first phase of the Trade Information System. The assistance to the region included trade information from extra-regional sources, and the provision of equipment for the national focal points.

228. The activities of the extra-regional agencies as outlined above have been very valuable, as they have assisted in laying of the groundwork for the establishment of the regional systems, and have provided, in cooperation with the governments and with the Member states, much of the technical, and human resources for operating the systems.

229. There has been evidenced, however the need for greater coordination and cooperation between the agencies, and therefore the definition of an overall framework within which the systems should operate is expected to provide adequate guidance to the extra-regional agencies as well as to the areas in which their activities would be most effective.

REGIONAL INFORMATION INFRASTRUCTURE SUPPORTING THE REGIONAL INFORMATION SYSTEMS

CHAPTER 9

230. Along with the establishment of regional information systems there has been a corresponding improvement of the special libraries which function as national focal points or participating centres for the bibliographical information systems. Some units have been engaged in for collecting and processing other types of data, and this is expected to continue as the national and regional systems develop.

231. While the level of human, material and financial resources is by no means adequate, the impetus provided by the development of national and regional information systems, and the corresponding increase in funding from national and external sources, has increased the absorptive capacity of Member states with regard to their ability to utilize assistance for the development of information services.

232. Regional focal points

The earlier regional focal points were established within libraries and documentation centres which already had some level of resources, and which had as part of their substantive activity undertaken some specialization in the sector treated by the system.

UNECLAC CARIBBEAN DOCUMENTATION CENTRE

233. This centre serves as the regional focal point for CARISPLAN, and CARPIN, and as the most technologically advanced, has also been providing assistance to national focal points in the development of computerized bibliographic information systems.

234. Human resources

The staff of the centre has expanded its original staff of information specialists, to include indexers and abstractors, subject specialists, a systems analyst, a programmer, and microgrophics personnel, and now has a staff generally literate in the use of personal computers. In addition the staff at the centre have had at the earlier stages of the systems's development the responsibility for assisting in the development of the national focal points, and the training of information personnel and information users from the Member states in the use of the systems' methodologies.

235. Information resources

The centre's bibliographical resources originally consisted of documents produced by United Nations agencies, and by the Member States. This collection has been gradually expanded to afford a more comprehensive coverage of the documents produced in the region, and other technical documents within the CDCC priority areas. More recently the collection has been expanded to include documents recording patents registered in the region.

236. Technological resources

The Centre has also made advances in the acquisition of technology resources which have been dedicated to the operation of the systems. The Hewlett Packard computer permitted the transfer of the CARISPLAN database from the UNECLAC Headquarters in Santiago to the Caribbean Documentation Centre, and the development of the CARPIN database.

237. This configuration with its terminals, and auxiliary microcomputers will permit the provision of Selective. Dissemination of Information Services from the CARISPLAN database in addition to the current awareness and retrospective search services which had previously been provided.

238. Online access to the CARISPLAN database is now possible. Users within Trinidad and Tobago regularly access the database, while the potential users in the other Member states are testing the possibility of online access.

239. The availability of the MINISIS software package from IDRC, and the MINI-MICRO CDS/ISIS package from Unesco has facilitated the processing of the system's records, and the transfer of data between the regional and one national focal point. The CDC has also mounted training programmes for the use of microcomputers, particularly of CDS/ISIS.

240. The establishment of a micrographics facility under the second phase of the CARISPLAN project with IDRC, has enabled the Centre to establish a bank of microfiche which can be used for the dissemination of copies of documents requested by users in Member states.

241. Financial resources

The financial support for the activities of the Caribbean Documentation Centre has been provided by the general budget of the United Nations with extra-budgetary support from IDRC. These resources have permitted the initial provision of extra-budgetary positions until they could be funded by the UN budget, as well as travel for CDC staff and participants representing Member States. Additional funding has been provided by Unesco for the training seminars on CDS/ISIS, and by WIPO for some aspects of the development of CARPIN.

242. As the basic infrastructural resources have been established in the Caribbean Documentation Centre, it is expected that the UN system will be able to provide maintenance and support required for the continuity of the services provided by the system, and assistance to other regional focal points particularly in the use of CDS/ISIS.

THE UNIVERSITY OF THE WEST INDIES LIBRARY, ST AUGUSTINE

243. This library serves as the regional focal point for CAGRIS, which also provides the Caribbean input to the Current Agricultural Research Information System (CARIS). As this library has a long history of specialization in the development of resources for study and research in agriculture - particularly agricultural research relevant to the region, it had a previously established resource base to permit it to serve as the regional focal point.CAGRIS is expected to become an integral part of the Library's programme, and the continuation of the system after the IDRC and other project funding is completed, is expected to be supported by the University.

244. Human resources

The information specialists responsible for the development of the CAGRIS regional focal point and the corresponding activities in the Member states are all on the staff of the University Library. There are professional librarians, indexers, some, with agricultural specialization, and clerical staff provided by project funding from IDRC. The staff of the UNECLAC Caribbean Documentation Centre, as well as consultants to the system, have provided additional assistance.

245. Information resources

The University of the West Indies Library has the largest holdings of technical agricultural studies in the region. These are mainly composed of commercially published books, and journals, research reports and theses of the UWI and other institutions. The UWI library does not however receive as a part of its regular acquisitions programme the project reports, feasibility reports, and other operational studies which are prepared for national or regional agricultural organizations, and this aspect of the system needs to be developed in the near future.

246. Technological resources

The UWI Library with its access to the additional technological resources of the University should be well equipped technologically, to collect, and process documents relevant to CAGRIS, and to disseminate information to all the users of the system. The microcomputers held by the Library are initially expected to be used for the development of the regional database, with future expansion to the University's mainframe as space requirements dictate.

247. Other relevant technological resources include: access to the AGRIS database, and to other databases offered by the major hosts, micrographics facilities, the availability of the University of the West Indies Distance Teaching Experiment (UWIDITE), for communication with some of the UWI Member territories, and access to Online Computer Library Center (OCLC) for the processing of some of the library's holdings.

248. Financial resources

Funding for CAGRIS is received mainly from the IDRC project with additional support from the UWI's main budget and from other agencies. Available funding makes provision for short-term training, establishment of the regional database, assistance to the Member States in the establishment of national focal points and the acquisition of technical materials, identification of users needs, and dissemination of information.

249. The regional centre is in the process of identification of users needs, and the establishment of the regional database, and therefore is providing only limited services to users.

THE CARIBBEAN COMMUNITY (CARICOM) SECRETARIAT

250. The Information and Documentation Section (IDS) of the CARICOM Secretariat is the regional focal point for the Caribbean Trade Information System (CARTIS). As the main thrust of the Caribbean Community is the facilitation of trade between Member States, this integral activity of collecting and disseminating information for the Secretariat's programmes is logically linked to the development of a regional database covering manufactured products, agricultural products, and relevant transport data.

251. Human resources

The Secretariat staff responsible for the development of CARTIS currently includes the information specialists of the IDS, as well as the subject specialists from the relevant sectors. The initial design and development of the database structure was undertaken with the assistance of a consultant specializing in trade information systems. All the staff is permanently employed to the Secretariat, but additional staff will be required in the areas of systems analysis, database management and programming.

252. Information resources

The IDS in support of the programmes of the Community, has, in the past fifteen years, been collecting published and unpublished works produced in or relevant to the region. In addition to commercially published monographs and journals, and documents of regional and international organizations, the collection includes the project reports, feasibility studies, and other analyses of aspects of the Community's activities.

253. Some of the quantitative and textual data which is included in the design of the CARTIS database, is currently being collected for the Secretariat's programmes, but the data collection activities will need to be expanded to ensure that the required data is indeed available for the regional database.

254. Technological resources

The facilities within the Secretariat for development of the regional database include microcomputers, on which the numerical, textual, and bibliographical databases have been designed, and which provide the basis for the initial development of the regional databases

255. Although there are plans for the development of data communication links between the Secretariat and the Member States, such linkages are not immediately available for input or dissemination of the information collected by CARTIS.

256. Financial resources

The funding for the first phase of The Trade Information System, which concentrated on export promotion, was provided mainly by UNDP with counterpart funding by the CARICOM Secretariat. Initial development of the second phase has been supported by IDRC, UNDP, ITC, and the Secretariat's regular budget. The Secretariat is currently seeking funding for a project which would provide for the further development of the System.

THE CARIBBEAN ENERGY INFORMATION SYSTEM (CEIS)

257. The Scientific Research Council (SRC) of Jamaica's Ministry of Agriculture has been designated the regional focal point for the recently established CEIS. The selection of SRC resulted from an expert mission's examination of the existing institutions - national and regional which specialize in the development of new and renewable energy sources. SRC was found to be the agency most active in this area, and the best endowed. It therefore seemed most appropriate to serve as regional focal point.

258. Human resources

The SRC is staffed with information specialists, and subject specialists. Additional staff for the development of the automated aspect of the database is to be provided for under the project recently supported by IDRC. The Commonwealth Science Council, and Unesco.

259. Information resources

The SRC has been developing bibliographical resources for the past twenty years, and in view of the Jamaica Energy Policy, and Jamaica's support of the Regional Action Energy Plan, is expected to continue this development as and integral part of its activities. The SRC as the Jamaica's national focal point for Science and Technology, works in collaboration with the other institutions in the country which are active in energy.

260. Although SRC has been collecting documents, and some numerical data on new and renewable sources of energy in Jamaica, there will be need for the early expansion of its activities to include relevant energy documents from the other Member states.

261. Technological resources

The SRC does not yet have a computer for the establishment of the regional database, but this been included in the project which provides for the establishment of the regional system. Resources presently available to the SRC do not permit data communication with any of the national focal points, or with any of the related regional institutions, but modems will be provided by the project.

262. Financial resources

Support for the establishment and development of the CEIS has mainly been provided for by external funding. Initial activities for the design of the system were supported by the Commonwealth Science Council, and IDRC, and subsequent support for the actual system's activities has been provided by IDRC, the Commonwealth Science Council and Unesco.

THE CARIBBEAN NETWORK FOR EDUCATION AND INNOVATION (CARNEID)

263. The CARNEID Office in Barbados has been proposed by the national representatives to CARNEID, as the regional focal point for the information aspect of CARNEID's activities and funding is being sought for the development of a bibliographical information network.

264. THE ASSOCIATION FOR CARIBBEAN TRANSFORMATION (ACT)

ACT, which is a private non-profit organization established a market intelligence system beginning initially with Trinidad, where it is headquartered, Antigua, and Dominica.

265. Human resources

The staff composed of agricultural economists, who have specialized in market intelligence, and auxiliary staff, collect process and disseminate data collected.

266. Information resources

The system is based on quantitative data related to agricultural production, and market availability.

267. Technology resources

The decentralized regional database, is held on IBM microcomputers, which are linked online between Trinidad and Dominica. The system utilizes the local bulletin board network for communicating with some users.

268. Financial resources

Funding for the first two phases of the information system has been provided by IDRC, and it is expected that ACT will also be able to generate income from provision of services to the agricultural community.

THE PAN CARIBBEAN DISASTER PREPAREDNESS ORGANIZATION

269. This organization was established by CARICOM Member states and other states of the region, mainly for the collection, processing and dissemination of information relating to the prevention of and preparation for natural disasters.

270. Human resources

A number of specialists in areas related to public health, medicine, and the environment prepare information which is regularly disseminated along with forecasts of impending disasters.

271. Information resources

These include documents, and quantitative data, along with the repackaged information.

272. Technology resources

The Disaster Preparedness Organization uses radio communication facilities to communicate with the national disaster preparedness offices. The Government Information Services also participate in the dissemination of information provided by this system.

THE CARIBBEAN DEVELOPMENT BANK (CDB)

273. The CDB is the regional focal point for the Caribbean Technological Consultancy Service, (CTCS) Network, a cooperative system linking more than 20 national and regional institutions, and approximately one hundred specialists. The Network was established to facilitate the sharing of experience and information intra-regionally. Emphasis is placed on finding solutions to technological problems faced by small and medium-sized industrial enterprises by CDB Borrowing Members.

274. Human resources

Subject specialists, and information specialists work with the assistance of national focal points on the analysis of user-information needs and identification of information resources to satisfy these needs. Two extension officers travel throughout the region to those countries without liaison extension services, to identify needs, provide on the spot advice where possible, and to follow up requests for delivery of information.

275. Information resources

The CTCS draws on the resources of the CDB's library which has established an electronic database, as well as the knowledge and experience of its staff and its member institutions. About one 16% of the formal requests for assistance received are satisfied by provision of hands-on assistance to users in the field.

276. Financial resources

In addition to the resources allocated under the CDB's regular budget, the services of the CTCS are supported by project funding from IDRC. CTCS also generates income by charging fees for some of the services provided.

CARIBBEAN AGRICULTURAL DEVELOPMENT INSTITUTE (CARDI)

277. The Caribbean Agricultural Research and Development Institute Literature Service (CARDILS) an organizational network with services provided from the CARDI Headquarters, mainly to staff members in all Member states.

278. Human resources

CARDILS is staffed by information specialists working closely with the Institute's researchers.

279. Information resources

Since its establishment CARDILS has developed a specialized collection of research reports by CARDI staff, and by other researchers in the region. It has also collected technical reports from similar organizations in other regions through its literature exchange programme.

280. Technological resources

The in house computer has been used to develop the database for CARDILS.

THE ORGANIZATION OF EASTERN CARIBBEAN STATES (OECS)

281. The OECS INFONET has recently been established and in addition to the present staff of the Economic Affairs Secretariat, additional human, information and technological resources will be provided, under the recently approved project.

NATIONAL FOCAL POINTS

282. The development of the regional information systems has envisaged the existence or establishment of libraries, and other information units to serve as national focal points, which can collect and disseminate information held within each country, and which can provide national access to other information held by the regional system.

283. In some Member states, the governmental structure and the plans for the national information systems have permitted the designation of an information unit which can be logically linked to the equivalent regional system. In others the national information plans and policies have designated initially the establishment of one national documentation centre to be the main resource for technical information. This national documentation centre would initially be the national focal point for all regional bibliographical information systems.

284. Human resources

Several factors in the past decade have influenced the increase of the number of trained librarians in the region. The programmes offered by the UWI Dept of Library Studies, the project-related training opportunities financed by funding agencies, and the expansion of the information field with the recognized linkages with information technology, have led to the increase in the number of librarians and information specialists available to staff national focal points.

285. The staffing situation in the special libraries which serve as national focal points, though much improved, is still very inadequate, and in most cases there will be need for additional staff to provide at least basic services. Development of an integrated career structure for librarians is needed to encourage recruitment, and to provide incentives to the recruits to the national information systems.

286. Other information professions

As the regional information systems are composed of several types of data, the human resources under consideration, include professionals working in the areas of quantitative data, repackaging of technical information, the dissemination through the mass media, and the development of computerized information systems. These professionals are currently engaged in related national activities, but will require specialized training in the systems' methodologies, and the repackaging of technical information which is an important activity not regularly undertaken by any of the national or regional systems.

287. Information resources Bibliographical information

The development of collections, has principally depended on the establishment of linkages with the sources, for the collection of locally produced reports, studies etc. The national budgets have permitted the purchase of reference materials, and in some cases project funding has assisted in expanding these collections.

288. Quantitative information

The databases of quantitative data, are held in various organizations within the national structure, but the Statistical Departments or Units are the main sources of quantitative data. Their main areas of concentration are trade and population data, but in addition data is collected in other sectors covered by the regional systems. Consultations relating to the design of quantitative databases should therefore include discussions with the statistical units on the possibilities of cooperation in the development of the national, and input to the regional systems.

289. Repackaged information and linkages to the mass media

The technical information held by the regional systems has not been regularly repackaged, and therefore there are no significant information resources which can be used for dissemination of information through the mass media. This area would need to be developed as a new aspect of most of the regional information systems

290. Technological resources

The majority of the national information systems are manual, but with the increasing availability of microcomputers, and with the availability of CDS/ISIS, which can be used for the establishment of bibliographical and textual databases it is planned that the national focal points will be gradually computerized.

291. Microcomputers are being provided to national centres under the CARSTIN project, and the OECS INFONET, and these are expected to permit the establishment of the databases at the national focal points, and the transfer of information to the national referral centres and the regional centres.

292. Financial resources

The national budgets provide financial resources for the national information systems but these are inadequate to cover all costs. This has resulted in significant dependence on external funding.

293. The developments related to improved national services, and participation in regional information systems, have involved additional costs of operating and maintaining the technological resources, as well as providing services to the region and sharing information held locally.

294. The availability or lack of financial resources has had a significant influence on the development of national and regional information systems, and therefore the acceptance and recognition of the value of formal information services has not always been followed up by action towards improved systems. In the cases where funding has been available, this has usually been regional and national resources matched by resources from external technical and economic assistance.

295. The availability or lack of funding in particular areas has therefore influenced the selection of sectors for the development of information systems. Funding has usually been in the form of two or three-year projects to be supported by the governments at the end of the project period. This requires long-term planning by the national and regional agencies to ensure continuity of the project activities at the end of the project funding.

296. Participating centres as the national and regional levels

In addition to the national focal points, national and regional organizations have been participating in the regional information systems. This has permitted government and private agencies, research institutes, universities, and regional organizations to participate in the systems, both in terms of input and as users of the information.

NATIONAL POLICIES INFLUENCING THE DEVELOPMENT OF THE REGIONAL INFORMATION SYSTEMS

CHAPTER 10

297. In order to develop a regional information system strategy, it was necessary to examine the national information policies, and their consequent impact on the regional systems.

298. The information sector as defined earlier is not yet recognized by national development plans, but is composed of several facets which are developed to different levels in the individual Member states. There have been developments within the information sector and it is expected that further developments will be encouraged by active participation in regional and international activities. The fact that information is indeed an interdisciplinary activity has encouraged the somewhat fragmented development of the national information sectors, with different national authorities being responsible for the activities.

299. Policies affecting the information sector cannot therefore be seen as homogeneous, but rather as components of a sector which can eventually be unified. An examination of national activities and national policy statements, indicate that there have been efforts at the identification of national policy issues, arrival at a national consensus at least on the technical level, and the translation of these proposals into official policy.

300. Policies which have been defined have been related to the individual parts of the information sector although in some cases there is recognition of the need for some unification of the various information activities. Overall national policies are therefore at the development stages for libraries and related information systems, data and tele-communications, statistical services, and the mass media.

301. Articulation of these policies in an official form would have a significant impact on the development of the national information systems, and consequently on the regional systems. These policies would serve as guides to the managers of the regional information systems in their initial design and subsequent development. They would therefore ensure that the regional systems are indeed oriented to the needs of the member states, and that they do provide information services which meet the needs of the national users.

302. Most of the Member states have articulated and documented policies relating to the libraries, archives and documentation services. These relate to the rationalization of organizational structures and services provided by libraries. The establishment of these policies have resulted in varying levels of administrative and organizational control over various types of libraries. There are not however, policies for the development of a unified information sector.

303. National policies and plans have been drafted, and presented for official ratification. Several have been officially approved, and all are being used as the framework for the development of national library services. These policy proposals, and national plans for the development of the national information system, have all recognized the value of participation in regional information systems, but have not identified the responsibilities of the regional systems for providing information services to the national users. The following countries have prepared official or draft national information plans and policies:

ANTIGUA AND BARBUDA
BARBADOS
THE BRITISH VIRGIN ISLANDS
CUBA
DOMINICA
THE DOMINICAN REPUBLIC
GRENADA
JAMAICA
MONTSERRAT
SAINT LUCIA
ST KITTS - NEVIS
ST VINCENT AND THE GRENADINES
TRINIDAD AND TOBAGO

304. In addition there has not been an definition in the national information policies of how the regional information systems should be structured or how they are expected to aid the Member states in the development of their national information systems. As there has been participation in the regional systems, further identification of the national policies had to be gleaned from relevant national activities which have included:

305. The decisions relating to information which were taken at the meetings of regional organizations. Approval was given at these meetings for the establishment of some regional information systems and for the definition and design of others in priority areas. The decisions at these regional meetings have been the basis for establishing several regional information systems.

306. In addition to the participation in regional meetings, the Member states have also demonstrated interest in the participation in regional systems by:

- Designation of national focal points for regional systems
- Input of records to regional systems
- Use of common methodologies and schemes

- Participation in meetings and seminars of the individual systems

- Use of the services provided by the systems

307. The reflection of the national policies in the activities of the regional systems, has not however extended in all cases to the determination of priority activities of the systems and the evaluation of the services provided by the regional systems. As the systems are relatively new, CARISPLAN is the only system in which there has been an evaluation exercise in which Member states have participated.

308. It is evident that there is need for the national policies relating to regional systems to be more clearly defined to ensure that existing and proposed systems are indeed defined within an acceptable framework and that the orientation of the systems is indeed acceptable nationally.

309. The earlier systems were bibliographical with a logical expansion to include quantitative and textual data as in the case of the designs of CARTIS and CEIS. National policies relating to the participation of Member states in integrated information systems are less clearly stated, and again the existence of a regional policy on this issue has to be gleaned from the fact that there have been national consultation and consensus on the design of the two *N* integrated regional systems, rather than officially sanctioned policy statements.

310. National policies relating to regional systems on quantitative data can mainly be identified from the stated policies of the National Statistical Department, which aim at regional cooperation and the use of common methodologies.

311. These units seem to be the major focal points for quantitative data in most of the member states, and therefore it would be in keeping with the national policies if the national statistical units were strengthened to do more analysis and disaggregation of the data already collected rather than establishing new units in the relevant ministries to collect data which might already be held by the Statistical Department.

312. Access to the quantitative database at the national level could then be provided by the Statistical Department through appropriate documentation centres.

313. Privacy

As the regional information systems focus on locally produced documents and other data, the lack of national policies relating to the classification and declassification of unpublished documents, particularly those produced within the public sector, is likely to impede the input of information to the national focal points, and subsequently to the regional databases.

314. The Statistical laws of most of the Member states prevent the identification of the performance and the financial standing of individual enterprises. These policies which have been nationally accepted for some time are also likely to influence the collection of information for databases on companies, unless there is evidence that the regional systems would respect their privacy in the same way as the national statistical departments.

315. Repackaging, analysis and dissemination by the media of technical information

Although the regional information systems have not been significantly involved in this area, the Government information Services have recognized the need to translate and repackage technical information for wider dissemination. This policy has been articulated by several agencies, and the regional systems should therefore link with the Government Information Services for communicating with the innovators, and the general public.

316. In addition to the national policies outlined above, the desirable characteristics of regional information systems which were defined in Chapter 5 identify other aspects of the establishment and development of the regional information systems which are acceptable to Member states.

317. Computerization

As plans for the regional information systems all include computerization the national policies relating to computerization, hardware, and software, were reviewed to determine an acceptable regional policy.

318. Within the national information sectors, the policies on computerization are still in the process of development, but various internal and external factors have resulted in the establishment of National Computer Centres, and in the use of computers for processing in several areas of national development.

319. The National Computer Centres have had some responsibility for policy-making, some of which has been influenced by technical capabilities. The centres were originally established to undertake data processing for the public sector, but are not always able to meet these demands, and therefore tend to process general administrative data.

320. They do provide technical support, and advisory services to departments establishing computerized systems. The availability of microcomputers has increased this aspect of their work.

321. The National Data Management Authority of Guyana is the only agency of its kind, as it has responsibility of determining national policies and for computerizing agencies within the public sector.

322. Technical influences on policies

The availability of mainframe computers, and the technical knowledge required for using the operating systems, have established de facto policies in relation to the software packages which can be employed and consequently the computerization activities which can reasonably be undertaken by some of the national focal points.

323. Software

The national policies for acquisition of software for use by the national information systems imply that where possible software should be purchased rather than locally produced, that access to regional experience in the evaluation of software would be valuable, and that regional systems should use where possible software which can be implemented with the minimum demands on the national programming staff.

324. Hardware

In addition to the capabilities of the systems, market forces also influence the national policies on the selection of hardware at the national level. There is a consequent trend toward the use of microcomputers in government agencies, and in some cases at the national focal points and participating centres. The policies for the public sectors have required the purchase of IBM microcomputers or compatibles as this is particularly related to the availability of reliable after-sales service within the country.

325. Mini-computers

For mini-computers there is are less clear cut policies, but there are national requirements for compatibility within the government sector, as well as the availability of reliable servicing.

326. Mainframe computers

These are being employed in several government agencies, and their main influence on national policies for computerization are related to the operating systems, the storage capacities, and the availability of programming staff. In several cases there is storage capacity, but there is not adequately trained and experienced staff to permit processing for the national information system.

327. Telecommunications

There are well established public switched telephone facilities which are available to member states, and which permit regional communication between members of the systems. Facsimile transmission services are in most of the member states.

328. Data communications

External data communications facilities are available for data transfer between several countries of the region - Barbados, Jamaica, Trinidad and Tobago and the Dominican Republic - and the United States and some other external locations. Input and access to the databases of the regional information systems require reliable error-free data transfer facilities, which can transfer data between member states, and this is not yet possible as there is not yet a public switched data network available for regional data communication. There has, however, been recognition of the value of regional communication through satellite transmission, as evidenced by the agreements of several of the member states to participate in the University of the West Indies Distance Teaching Experiment (UWIDITE).

MECHANISMS WHICH FACILITATE NATIONAL AND REGIONAL INFORMATION FLOW

CHAPTER 11

329. Access by users to the manual and automated databases of the national and regional systems and to the corresponding services, has been significantly influenced by the facilities for information transfer.

330. At the regional level the technical information services are based in the capitals, and consequently access to the holdings of the national systems tends to be limited to the residents of these cities. As the systems provide and are expecting to provide information directly relevant to the needs of the urban and rural development communities, the facilities for information dissemination need to be examined.

331. Libraries, documentation centres and archives

The referral centres, libraries, and documentation centres, are the main points of contact from which users can expect to obtain technical information on a regular basis. The referral centres which should function as the guides to sources of data are not yet fully established in the member states. They would save the user's time while ensuring that the available information sources are indeed utilized. The national referral centres should also serve as national sources of information on the holdings of the regional databases.

332. Statistical services

The national statistical services also facilitate the flow of information within the region. Their regular and special publications and services disseminate statistical data on areas of general interest. The departments also provide information in response to users' requests. The documented output from these services is also disseminated through the special libraries and documentation centres.

333. Communication facilities

The users' contacts with the regional databases, require the availability of reliable means of communication. Postal and telephone telex and facsimile services are now used for communication within the member states and within the region. These are all used for requesting information, but because of cost, most information services are provided either directly to the user in person, or are supplied by general postal services.

334. Data communication

Developments in the data communications infrastructure in the region have been the official responsibility of the national telecommunications administration. National data networks have been established in three of the member states, and local data transfer is therefore possible.

335. National networks linked to external data communications networks permit access to external databases and permit the transfer of data to external databases. Communication within the region has not improved correspondingly however, and although the Caribbean News Agency (CANA) demonstrates that data transfer is possible between some countries across the public telephone lines, a public data network, for the transfer of data between the regional focal points, and the national focal points is not yet in place.

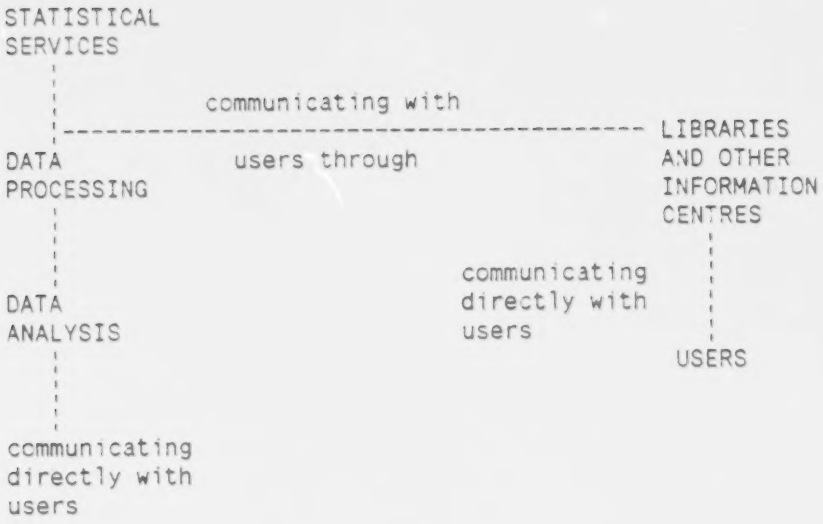
336. The University of the West Indies Distance Teaching Experiment uses satellite communication for linking the UWI territories, and the existence of nodes for UWIDITE in five countries, indicates the possibility of developing a regional data network with the addition of data communication facilities.

337. Recent developments in the data communications sector have provided online access to the CARISPLAN database, and now permit some users of the systems to have instant response from remote locations. These facilities, are, however not widespread, and the possibility of access from outside Trinidad is still being tested.

338. Mass communications

The mass communication facilities which are available include the broadcast and print media in the public and private sector. The Government Information Services all disseminate a certain amount of technical information, particularly in health, agriculture and disaster preparedness, and they can therefore serve as facilitating mechanisms for the dissemination of information from and about the systems.

339. Of particular note is the Caribbean News Agency (CANA) which links most of the mass communication agencies in the CARICOM and some of the other CDCC Member states. Features of interest to the region include areas covered by the regional information systems.



USERS ACCESS TO INFORMATION FROM LIBRARIES AND STATISTICAL SERVICES

A REGIONAL INFORMATION STRATEGY TO THE YEAR 2000

CHAPTER 12

340. In the light of the number of regional information systems in place, or planned for the Caribbean, and the fact that the initiatives for their development come from mandates which could lead to overlapping programmes, coordination of existing and proposed regional information systems seems to be particularly vital at this time. This would permit the rationalization of the existing and proposed systems and programmes, and would therefore maximize the benefits from the systems.

REGIONAL POLICY ISSUES

341. Rationale for information systems

The main policy issue seems to be the requirement throughout the region for the development of information resources based on the information produced in and about the Member states. The development of regional information systems is expected to establish this capability, and to ensure that the development community of the region can share the available information and experience to enhance their development efforts.

342. Regional information systems - basic structure

Regional information systems should be composed of regional focal points, regional institutions active in that sector, and national sectoral focal points designated by Member states as their link with the regional systems. This ensures that there will be effective participation in terms of input and output and use of services. The resulting cooperation is expected to be mutually beneficial to the users of the system at all levels. The regional systems are therefore expected to provide access to information produced in or about, or relevant to the region.

343. Policy for developments to the year 2000

These policy proposals will attempt to forecast required developments in the regional information systems for the next decade, and until the year 2000.

344. The User community

The primary users of the regional systems are the policy makers, planners, and technical personnel and researchers in the public and private sectors. In an effort to maximize the use of the scarce resources of the region, however, the regional systems should also serve other categories of users, the other members of the development community - the researchers, practitioners, innovators in the relevant fields, and the members of the educational system.

345. Level of treatment

To ensure that the regional information systems can function as development support systems, the policy proposals include some details which can ensure that the systems can achieve the objectives identified for the region.

346. Coordination of regional policy and systems

As the systems have developed they have demonstrated a need for some regional consensus on determination of, and planning for the development of new regional systems, proposals for changes required, boundaries of systems, and long and short term developments.

347. National sectoral focal points

Each regional system should have national sectoral focal points which should be active information units.

348. Regional focal points - regional organizations

Existing regional agencies should be considered wherever possible, as regional focal points for the regional information systems, and should also be participating centres in the regional systems to which they are relevant. Whenever national organizations are proposed as the most appropriate national sectoral focal points, the system design should incorporate a methodology for the system to report to the Member states.

REGIONAL COMPATIBILITY

349. As system interconnection and communication are requirements for the existing and proposed regional systems, there are consequent requirements for the compatibility of structures, methodologies, and equipment which would permit the merging of databases at the national level, and would eliminate duplication of effort required for input to the various regional systems.

350. Compatibility is also required in the definition of boundaries of the content of the systems, and in the employment of methodologies for input.

351. Software and hardware employed by the systems should be compatible and should also enjoy functional compatibility with that of the national sectoral focal points.

352. Standardization, Communication, and Computerization

A major objective in the design of the regional systems is regional compatibility and communication between the regional systems, and therefore standard methodologies and techniques have to be established and maintained. The bibliographical format for the CARISPLAN database is in use in the national sectoral focal points and in some participating centres of the system, and this format should therefore be used for the development of the bibliographical databases for the other regional systems.

353. Access by users

The access by users, the main objective of the regional systems would also be facilitated by the development of compatible systems. Such compatibility is expected to permit the merging of databases at the national sectoral focal points and at the national referral centres as they develop. This will reduce the number of steps required for accessing the databases of the various systems. While the importance of national privacy and confidentiality are recognized, this is not expected to be at the expense of sharing of information for regional cooperation.

354. International compatibility

Compatibility of regional information systems with global systems is desirable, but this should not take precedence over the issue of regional compatibility. International standards for data encoding, and data transmission should be employed where possible as they will, provide for system interconnection and communication when required.

355. Standardizing bodies which provide guidelines for international compatibility - The national standards bodies, the International Standards Organization, (ISO) the International Telecommunications Union, (ITU), should be used to provide guidance for the selection of methodologies for the regional systems.

THE SCOPE OF REGIONAL SYSTEMS

356. Input and access policies

The regional systems should continue to place emphasis on the locally produced and relevant data, in - bibliographical or quantitative form, which where relevant should be repackaged for dissemination through the national and regional media.

357. Classification and declassification policies

The regional systems will treat with data which is most appropriate to the type of services required by the particular groups of users, and will therefore develop and implement procedures for classification and declassification of information held by the regional systems.

358. Subject scope

The general subject scope will be defined according to the general priority subject areas. Further refinement of coverage will be worked out in the design of each system and in consultation with the managers of systems. The systems ought to exist as discretely as possible while allowing for desirable duplication and overlap.

359. System definition should be as reflective as possible of the sectoral definitions of the governmental structures of the Member states, and should therefore fall within the priority sectors of: Agriculture, Industry, Trade, Education, Health and Medicine, Socio-Economic planning, and Science and Technology which should be logically subdivided into its component development sectors, to permit more effective management of the information aspect by the regional systems and at the national level.

360. Nature of the information product

The systems will attempt to provide products relevant to the needs of the users. This will vary from the establishment of a regional database of bibliographical or quantitative data, which can be accessed for retrospective information, to the collection and dissemination of current information which would be required for the systems operating within the trade sector. Some systems would be also required to analyze the data retrieved before delivery to the user.

361. The range of regional information systems which are expected to be established or to develop before the year 2000, fall within the priority sectors defined by the Member States. They are expected to provide coverage of regional activities by collection, processing and dissemination of bibliographical, textual and or quantitative data, disseminated in their original form, or repackaged, and made accessible through the information systems, or disseminated through the mass media. The product while perhaps reaching the user in different forms, would therefore emanate from databases containing very current, as well as retrospective data.

362. The systems treated by this strategy have been described earlier. They provide various types of information, and are mainly at very early stages of development. It is therefore necessary to determine, as part of the strategy, the systems which should remain as proposed, those which should include additional activities, and those which should be merged to permit more effective use of scarce resources.

363. The regional information systems are expected to provide information in the following categories:

Bibliographical information	Information about documents
Textual information	Records of data gathered by the information systems e.g. databases of research projects
Quantitative information	Data which can be quantified usually numerical
Repackaged information	Information which has been interpreted and possibly simplified
Dissemination through the mass media	Repackaged information disseminated with the aid of the mass media

364. It is proposed that the regional systems all develop services which include the categories listed above by establishing linkages with related systems and with the mass media.

365. Services to Member states

Service to users, needs to be emphasized in the development of the regional information systems. As the Member states are partners in the development of the systems, and as they are or will be contributing to their development, the main services and products should initially be directed to the policy makers, planners, and technical personnel in the service of the governments of the Member states.

366. The systems therefore need to provide access to their databases, to abstracts or other document surrogates, and to the actual data held by the system. Each system should therefore ensure the availability of updated copies of the regional database to the national centres. Online access to the regional databases should continue to be developed, although equipment costs, and communications charges will limit the number of users of this facility.

367. Assistance in the development and automation of national sectoral focal points

The national sectoral focal points are at various stages of development, and the design of the systems should therefore make provision for economic and technical assistance in the establishment and development of the national sectoral focal points.

368. The regional and some of the national information systems are gradually being automated, and therefore participation in related activities will require access to computer facilities, and the availability of assistance for the development of computerized systems. National sectoral focal points should therefore continue to be assisted by the regional systems in the automation of the national sectoral focal points.

369. System linkages

As information services to users can be provided from different sources, the systems which have developed require linkages to ensure that a complete information service can be delivered while reducing the danger of overlap. The potential for overlap, which was outlined earlier, demonstrate the need for systems within the same sector, or in related sectors to be linked, initially in terms of coverage, and subsequently in terms of access by users.

370. Repackaging of information

This seems to be the logical means of ensuring that technical information can be assimilated and used by the " development community " which would include specialists in other fields, and non-specialists. In the case of documented research, authors should be requested to participate in repackaging of their works, but analysis of textual and quantitative data can be undertaken by specialists in the field. The information held in the patents database is an example of data which can be repackaged, and disseminated through another system such as the Caribbean Technological Consultancy Service (CTCS).

371. Information on regional systems and developments

As the systems are relatively recent and some are still at the design stage, there is not always awareness of:

the existence of the systems

the services provided by the systems, and their objectives and structure

current developments in the systems and related programmes.

372. The regional information systems are in the main publicly owned, and funded by governments and by development aid. It is therefore important that the system managers report regularly to the Member states, through formal reports, newsletters, etc, and therefore gain feedback from their constituencies on the functioning and services of the information systems.

373. Information to users and potential users of the systems

To ensure that Member States are aware of the systems' operations, reports on the systems which are presented to the governing councils of the regional organizations should be repackaged and disseminated through the newsletters of the organizations and through the national and regional mass media.

374. Information on the data and information held by the system should also be more widely disseminated. Particular items, or data of special significance should be announced through the regional newsletters, and through the national and regional media.

375. This would be particularly relevant in relation to valuable trade and agricultural data, such as the changes in regulations on pesticides, or the implementation of the new Common External Tariff.

376. Use of the mass media

The value of the mass media as a vehicle for the dissemination of information held by the system has apparently not been recognized in the development of regional information systems. It can play an important role at two levels. It can be used to make users and potential users aware of the systems and the services provided, and it can also make significant items of information available and known to a wide cross section of users.

377. Repackaged information, reviews, and analysis of documents and other data held by the systems can be given wider dissemination through the mass media.

378. The role of the 'new' information technologies

The development of the systems should also involve, where possible the use of the new information technologies which are available in the region, if these can be found to achieve more effective communication. Electronic bulletin boards, and the University of the West Indies Distance Teaching Experiment (UWIDITE) can be used for communication between the systems managers and the representatives of member states, and for planning and policy meetings on the systems' development. These facilities can also be used for the dissemination of information as the equipment becomes more generally available.

379. Human resources

The development in information activities and in the in the type of information services required have implications for manpower development and the type of information professional required. The groups in the information sector which would be involved in the development of the information systems include:

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librarians
documentalists
information analysts
systems analysts
computer scientists
statisticians
mass media personnel
telecommunications personnel,

working with input from subject specialists.

380. The activities of these professionals are becoming increasingly related and, and there is consequently need for greater awareness of the related activities. In the regional systems, all these professionals will have a role in the future information resources management which will be required of the systems.

381. Short-term training of information professionals is an activity which has been and should continue to be included in the programmes of the regional information systems. Training in the use of the structure of the systems, the systems methodologies, and the services will require short seminars, either conducted at the regional focal point, or through communication facilities such as UWIDITE.

382. Training for system managers, in techniques for the linking of systems and expertise into networks will also permit the information personnel responsible for the development of the regional systems to assess, acquire, and use particular new technologies which required for the regional systems.

383. Research and analysis

The universities in the region should undertake research and analysis relating to information systems, and the value added to the original data by the processing through information systems.

384. Financial resources

Some major resources are now in place for the maintenance and further development of the regional information systems. Developments over the next decade will, however, require additional national, regional and external funding. The regional focal points should therefore continue to seek funding for the regional systems on a project basis. These proposals should include requests for infrastructural support for the Member states, and should be supported by the national agencies responsible for technical assistance. Determination of the cost of information and the arrangements for payments by users, should be considered by the system managers and the representatives of Member states as a means of ensuring future sustainability of the regional systems.

385. Funding in addition to that allocated by the national budgets, will be required to initially provide:

specialist human resources for the establishment of the national and regional systems

long-term training of information professionals for the to staff the systems

technical information resources

technological resources for the development of services.

386. Coordination of activities of external agencies

There is a need for coordination of the participation of funding agencies in the development of regional information systems. This is particularly evident in the area of information as this is an interdisciplinary sector, and the regional systems are likely to be funded by external agencies working on sectoral developments.

PROPOSALS FOR IMPLEMENTATION OF THE REGIONAL INFORMATION SYSTEM STRATEGY THROUGH THE PROPOSED REGIONAL NETWORK OF INFORMATION SYSTEMS

CHAPTER 13

387. The development of the regional information system strategy, has so far involved the analysis of the national and regional policies in relation to the regional information systems. The analysis, and the table of systems has shown overlap of existing and proposed systems, and the need for linkages between systems in related sectors which hold different types of data. The policy proposals have summarized the issues involved, and these proposals for implementation of the strategy define the areas to be covered by regional information systems, and the linkages which should be established between related systems.

388. The information systems proposed are expected to work together with regular consultation on significant issues. At this stage the systems working within the regional network will be defined, the gaps identified, and the overlap and undesirable duplication identified for elimination.

PROPOSED CHANGES IN REGIONAL INFORMATION SYSTEMS

389. General regional information systems

The question of general regional information systems, was considered at the time of design of the existing information systems. In the light of the governmental structures, and the requirement for the satisfaction of users needs, it was decided that liaison with regional information producers, and specialization of services would be more effective on the basis of sectors, rather than general regional information systems, covering all sectors. The use of standardized methodologies, and the merging of the databases of the regional systems is expected to achieve the objectives of providing information to the users as required.

390. A general textual information system - a database and referral system on research projects, specialists, and institutions has been proposed for development under the aegis of The Caribbean Information System for the Exchange of Experience and Information in Science and Technology (CARSTIN). Unesco has initiated preliminary work, through CARSTIN and has established methodologies for the development of this database.

391. Unesco is indeed commended for its foresight in this regard and it is recommended that the activity be executed through the regional focal points, national focal points for the sectoral systems, and national and regional participating centres. This will ensure the systematic development of the database, and the effective coverage of the region.

392. This database will be more effectively developed on a decentralized basis, with the regional focal points and national focal points for each system undertaking the responsibility for collecting and disseminating information within its sector. Such a modification in the procedures would prevent overlap with the database established by CAGRIS and the one which it to be established as part of the project establishing the Caribbean Energy Information System (CEIS).

SECTORAL INFORMATION SYSTEMS
SOCIO-ECONOMIC PLANNING

393. This is an area from which information is required for the development activities of all sectors. The CDCC recognized this need and as the first regional system, CARISPLAN has covered a great deal of ground in the development of a bibliographical information system in this area.

394. This system is expected to develop further with the establishment of a Selective Dissemination of Information (SDI) Service to the policy-makers and planners of the region. CARISPLAN should also expand to include textual data on research and development projects in the socio-economic area

395. Repackaging and wider dissemination of information held by CARISPLAN should also be undertaken to make the information in the regional database more widely available to users.

AGRICULTURE

396. Agriculture has been designated by the Member states as a high priority for regional development. Regional systems in agriculture have therefore been established or proposed for several types of data.

397. Bibliographical information

CAGRIS is the only general regional bibliographical information system, and as it has been designed to cover all the categories of the global agricultural information system AGRIS, it is expected to include all areas of agricultural information including forestry and aquaculture.

398. The Caribbean Agricultural Research and Development Institute's Literature Service (CARDILS), which will continue to cover the information needs of the CARDI research staff will operate within the framework of the Institute's programme.

399. Textual information

The Caribbean Information System for the Agricultural Sciences (CAGRIS) has collected data for the first issue of a regional directory of agricultural research in progress. This should be expanded to include development projects, and continued on an annual basis with the participation of the national focal points, and the national and regional participating centres.

400. To ensure long-term access, the directory should be developed into a database which can provide access to information on agricultural specialists, and specialist institutions in the region. The development of the CAGRIS database for research projects should be executed in conjunction with those for the CEIS and CARISPLAN.

401. Quantitative data

The regional systems within this category are:

The Association for Caribbean Transformation Agricultural Information System (ACT AIS) and the Production and Marketing Intelligence System (PROMIS).

There is collaboration in terms of methodologies. ACT has developed a database relating to agricultural products, and related data, while PROMIS will function at the CARICOM Secretariat as a clearinghouse of very current data on agricultural products available for sale.

402. As a specialized development within the agricultural sector, a fisheries information system for quantitative data has been proposed. The proposals by the Organization of Eastern Caribbean States (OECS), and the Trinidad and Tobago Ministry of Food Production, Marine Exploitation and Forestry (Environment), should be unified to provide the structure of a regional information system in this very important area.

403. Although ACT AIS does repackage some of its data for dissemination, there is as yet no regional system for repackaging data, and for dissemination of technical agricultural information through the mass media. Information service to the agricultural community would be greatly enhanced by regular repackaging and dissemination of agricultural information through the mass media.

TRADE AND COMMERCE

404. The Caribbean Trade Information System (CARTIS) is the regional trade information system. It currently includes the CARICOM States, but should be expanded, as permitted by the Treaty establishing the Caribbean Community, to include the other Caribbean territories.

405. Bibliographical information

CARTIS has been designed to cover information in all areas related and relevant to regional trade.

406. Textual data

The design of CARTIS also includes profiles of companies in the region and other data, particularly transport, which facilitates export promotion. The Caribbean Basin Information Network (CBIN) which provides data on US companies interested in trading with the Caribbean provides information complementary to CARTIS.

407. Quantitative data

Data on manufactured products available for sale also falls within the scope of CARTIS.

408. Repackaged data and Mass media dissemination

Information held by these systems is of interest to the business community - manufacturers, exporters and importers, and dissemination of information about the system, and on its holdings seems to be the best means of reaching the users.

INDUSTRY

409. There are several systems which are directly relevant to the industrial development of the region.

410. Bibliographical information

There is not yet a general bibliographical system for industry, but The Caribbean Patents Information System (CARPIN) which covers patents registered in the region, is a specialized one in this sector.

411. The proposals for the development of systems for a technology transfer information support system, and for information services to small scale enterprises which emanated from the 1986 CARSTIN, meeting both fall within the area of industry, with some overlap with CARPIN.

412. A general industrial information system for bibliographical information is therefore recommended to fill the existing gap. This system would identify other areas of bibliographical information required by all the industrial sector and establish a regional information system to serve this sector.

413. Quantitative data

There is no regional system in this category and a system for quantitative data other than that provided by CARTIS should be developed.

414. Repackaged data

The Caribbean Technological Consultancy Service (CTCS), is the only information service in this category. It should draw on information from the other categories of industrial information as they develop. CTCS concentrates on providing information appropriate to the small-scale enterprises in the CDB Member states, it is limited to a particular scale of technology.

415. Information for medium-scale industries should also be provided through the expansion of CTCS, or through the establishment of a related information system. The information system for small-scale industry proposed by CARSTIN, would overlap with the services of CTCS which has since its establishment used innovate methods to transfer information and experience within the region. It is therefore recommended that Unesco support the further development of the CTCS, to enable it to reach a wider user community.

ENERGY

416. The Caribbean Energy Information System (CEIS) is the only system in this area. This system has been designed to include several categories of data - bibliographical data, quantitative data, and textual data related to research in energy. It therefore serves several of the purposes required by the users, but the requirements for repackaged data, and wider dissemination of energy information will require an extension of CEIS or the establishment of another system for the repackaging and dissemination of the information held by this system.

BANKING AND FINANCE

417. In this sector a sub-regional information system treats a very specialized area of banking and finance. The regional debt management information system for the Member states of the Eastern Caribbean Central Bank, serves a very clearly defined information need.

418. There is the requirement however for the other areas of banking and finance financial information which are not yet being served, and general bibliographical, textual, and repackaged data, on the banking and financial sector of all the Caribbean countries needs to be treated in one of the regional systems. As CARISPLAN already has some of this information in its database it seems to be the most appropriate for developing an information system for in this area.

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HEALTH AND MEDICINE

419. The system operated by The Caribbean Epidemiological Centre (CAREC), for the collection, processing and dissemination of numerical data on communicable diseases, is the only regional information system in this sector. Discussions between The CARICOM Secretariat and the Pan-American Health Organization (PAHO) should be directed towards the establishment of a general regional system covering all areas of regional health information not covered by CAREC. The proposals for a Regional medical library network for the Commonwealth Caribbean should be incorporated into the general system designed for the region.

EDUCATION

420. There is no regional information system in the education sector. Proposals by the Caribbean Network for Educational Innovation and Development (CARNEID) office should be reviewed and expanded with regard to the capabilities of CARNEID, to cover all the categories of data identified above.

LAW

421. Two structures for regional information systems are being studied by the University Law Faculty Library. The proposed systems for regional legislation, and for Marine Law should be combined, and established as one system.

DISASTER PREPAREDNESS

422. This information system was established as an active system to meet a need for information on preparing for and prevention of disasters. This system's linkages with the mass media provide the required range for dissemination of information.

423. It is recommended that there be further linkages with the Caribbean researchers who are engaged in preparing a lexicon for the Caribbean Creoles, so that the benefits from the research projects can be translated into a very practical application immediately beneficial to the region

PRIORITY AREAS IN WHICH THERE ARE NO EXISTING OR PROPOSED REGIONAL INFORMATION SYSTEMS

424. Tourism and the environment are two areas which have been declared priority areas by all the Member states of the CDCC. There are some information services in these areas, but no coverage by any of the regional systems.

TOURISM

425. The Caribbean Tourism Research Centre collects numerical data on the status of the tourist industry, to support its research activities. The establishment of a regional system would require expansion of these activities to cover all categories of data.

ENVIRONMENT

426. Although the Environment is a priority area in the region, there is no related information system. INFOTERRA, the global information system for the environment, provides a global information service from national focal points which act as referral centres. Within the region national focal points have been designated but these are not active information units, and have not been actively involved in processing or dissemination of the information held.

427. A regional system for the environment would permit the sharing of the environmental information about the region and would also provide assistance for the development of the national focal points.

428. The regional Office of the United Nations Environmental Programme (UNEP) which was recently established in Jamaica, at the initiative of the Caribbean governments, will collect for its regular activities some of the data required for a regional information system, and could expand its information activities to include the establishment of a general regional information system on the Environment.

429. Languages used by the systems for dissemination of information

As information systems need to provide information packaged in a manner which makes it easily usable, the language used by the systems for the dissemination of information is a factor in achieving the most effective dissemination and maximum use of the regional information systems.

430. Within the CDCC grouping there are three official languages, Spanish, French, and English along with the French-based Creole of Haiti, Dominica, Saint Lucia, and the English-based Creole of the Netherlands Antilles and Suriname. The Creoles are widely used in these countries particularly by the rural populations.

431. Of the systems in operation, CARISPLAN was established as a trilingual system and provides its output with trilingual access keys. If the other systems which are being developed are to serve the region effectively, it is vital that the language of their output match the language of the users. There is also need for the translation of the abstracts, and of the documents held by the systems, and eventually a regional register of translated documents to prevent duplication of effort.

432. In addition to the official languages, the Creoles can be effectively employed in the dissemination of information to the general public. The French-based Creole is being used by the ACT Agricultural Information System (AIS), to disseminate information in Dominica, and this practice should be employed by the other systems as they develop.

433. The following recommendations relate to the needs discussed and the activities required for the implementation of the regional information system strategy.

RECOMMENDATIONS FOR IMPLEMENTATION OF THE STRATEGY
NETWORK MANAGEMENT

434. Regional information systems for providing access to the information produced in or about the region, should be established or developed in the priority areas of:

AGRICULTURE
EDUCATION
ENERGY
INDUSTRY
SOCIO-ECONOMIC PLANNING
TRADE
DISASTER PREPAREDNESS
THE ENVIRONMENT
TOURISM
LAW
BANKING AND FINANCE
HEALTH

435. The rationalization of the systems, and the linkages proposed, in Paragraphs 370 - 409 be used as a guide to eliminate overlap and for determining linkages of related systems.

436. As the implementation of the policies will require coordination of the activities of these systems, it is recommended that a Caribbean Network of Regional Information Systems be established. The Network should be composed of the existing regional information systems, and others as developed, and the systems' managers would determine current and ongoing policies, the boundaries between systems, and the linkages of related existing and proposed systems.

437. Meetings of the Systems' Managers should be convened regularly, and the University of the West Indies Distance Teaching Experiment (UWIDITE), should be investigated as a means of regional communication.

438. The fact that the regional systems are multi-disciplinary, requires that the strategy be ratified at the highest governmental level. It is therefore recommended that the strategy be presented to the next meetings of the Heads of Government of the Caribbean Community, and to the next meeting of the Caribbean Development and Cooperation Committee (CDCC).

439. The CARICOM Secretariat and the UNECLAC Office for the Caribbean should be responsible for presenting proposed changes in the strategy to the future meetings of the Heads of Government Conference, and to the CDCC.

440. The Network should be recognized as the regional link with extra-regional and international agencies. This would encourage the development of the regional systems within a systematically developed strategy.

SYSTEM DESIGN

441. There should be an overall design for each of the systems proposed. This design should include consultation with Member states, on the basic structure of the system, their participation, and the project proposals for extra-regional funding.

INPUT

442. As the systems are based on locally produced and locally relevant material, it is also recommended that the Member states and regional organizations ensure that their policies of classification and declassification facilitate access to unpublished documents and other data on the results of regional experience and research.

PROCESSING

443. That common methodologies be employed for the design and structure of the systems' databases.

444. Hardware

As the distribution of copies of regional databases to Member states will require compatibility of equipment, it is recommended that the equipment used in the micro-computer-based systems be IBM compatible machines for which servicing is locally available.

445. Software

As the MINI/MICRO CDS/ISIS software package produced by Unesco is the most appropriate package available, it is recommended that this be the software standard for bibliographical databases. UNECLAC should be requested to serve as the centre in the region for distribution of the package and revisions, for linkage with Unesco, and for training of staff of the national and regional centres. The possibility of data transfer between MINISIS, CDS/ISIS, and OCLC should be investigated to facilitate the participation of the University libraries in the regional systems.

DISSEMINATION OF INFORMATION

446. Information on the systems

Member states should be made aware of the systems, their structure, services, and local points of access to the systems' resources. The public and private national and regional media should be used to promote the systems. The newsletters of the regional organizations, - CARICOM Perspectives, CDCC Focus, and CARINET should be employed to publicize the systems.

447. Information on the regional information system strategy

The strategy as finally confirmed by the Member states should be as widely circulated as possible, within the region as well as to extra-regional and international organizations involved in the development of the regional information systems.

448. Information held by the systems

Users and potential users need to be aware of the information held by the systems, and it is therefore recommended that updated copies of the regional databases should be regularly distributed to the national focal points. Printed output should also be distributed to provide backups for the computerized systems.

449. Repackaging of information

Significant pieces of information, held by the systems should be summarized, analyzed, review and disseminated through the mass media.

450. Access to external databases

Relevant information produced outside of the region should be made available to users of the region through relevant systems, when the regional databases have been established.

451. Data communication

It is recommended that a regional data network be established to facilitate communication, and to reduce travel costs between the national and regional focal points of the systems. It is recommended that the possibility of using UWIDITE as the basis of this network be further investigated.

452. NATIONAL POLICIES

The development of national information policies for the information sector will facilitate national development, and will clarify the relationships with regional systems and programmes.

453. There should be regular communication between the national focal points and the regional centres to ensure the implementation of the national policies.

454. HUMAN RESOURCES

Programmes for the development of information professionals should include training in areas required by the systems. This should include long and short term training in the areas of systems analysis, computer literacy, and the repackaging of information, the languages of the Member states, and other subject specializations.

455. FINANCIAL RESOURCES

Information should be designated a priority area for national budgetary funding and for external technical and financial assistance. Regional agencies should provide assistance at the national level within the framework of the regional system strategy.

456. Future developments

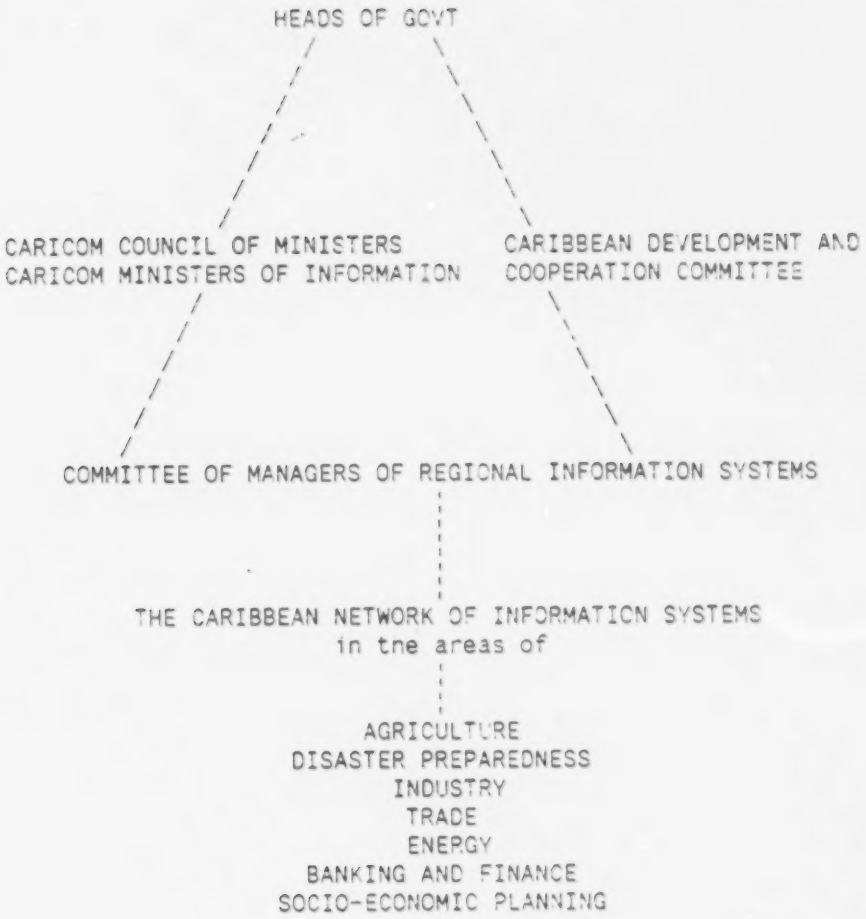
The above proposals have sought to rationalize the development of the regional information systems with particular emphasis on the aspects the responsiveness of the systems to their constituencies. The mechanisms recommended for implementing these proposals involve:

Initial review by a meeting of the systems' managers, and other technical experts

Circulation of the proposals to all Member states

Ratification at the next meetings of the :
The Caribbean Development and Cooperation Committee
The Heads of Government Conference of the Caribbean Community.

457. The acceptance by the above groupings of ministers is expected to provide the Mandate for implementation of the strategy, and therefore ensure its availability as the framework governing the regional information system to the year 2000.



A PROPOSED FRAMEWORK
FOR THE DEVELOPMENT OF THE REGIONAL INFORMATION SYSTEM
STRATEGY

CONSULTANT'S MISSION TO UNECLAC SUB-REGIONAL HEADQUARTERS
FOR THE CARIBBEAN,
THE CARICOM SECRETARIAT, AND OTHER STATES

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CARICOM SECRETARIAT

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Cde Terrence Holder	Ministry of Information

EXTRA-REGIONAL AGENCIES

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UNEP

Dr Noel Brown	Chief North American and Caribbean Section

IDRC Information Sciences Division

Mrs Martha Stone	Director Information Sciences Division

Mr Shahid Akhtar
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Mr Robert Valantin
Mr Terry Gavin
Mr Ed Brandon
Mr Peter Browne
Mr Kerry Broadbent
Ms Pat Thompson
Ms Gisèle Morin-Labatut
Ms Frances Delaney
Ms Sharon Henry
Mr David Balson
Mr Bob McKercher

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REPORT OF THE MEETING ON REGIONAL INFORMATION SYSTEM STRATEGY FOR THE CARIBBEAN

Port-of-Spain, Trinidad and Tobago
27-29 May 1987

ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN
Subregional Headquarters for the Caribbean

CARIBBEAN COMMUNITY (CARICOM) SECRETARIAT

OPENING SESSION

1. The meeting which was convened to discuss the consultant's report: A regional information system strategy for the Caribbean to the Year 2000 was opened by Ms. Wilma Primus, Manager of the Caribbean Documentation Centre. On behalf of the Director of the Economic Commission for Latin America and the Caribbean and the Caribbean Development and Co-operation Committee (ECLAC/CDCC) Secretariat, she welcomed the system managers, representatives of member states and other specialists to the meeting.

2. Ms. Primus briefly analyzed ECLAC's involvement in the development of regional information systems since the 1977 meeting on Regional Co-operation for Access to Information in the Caribbean and the Third Session of the Caribbean Development and Co-operation Committee which had mandated to the ECLAC Subregional Headquarters for the Caribbean in 1979 to establish and co-ordinate sectoral information systems in priority areas. She stressed the need to identify and resolve policy issues as a means of working toward the effective co-ordination of the existing and proposed regional information systems.

2. Ms. Carol Collins, Chief, Information and Documentation Section of the Caribbean Community (CARICOM) Secretariat, in her introductory statement, traced the development of the Secretariat's involvement in regional and national information policy since 1974. Initially the emphasis had been on the development of the public library systems, but this role had been extended to include assistance in the development of national information policies and systems in the OECS states. The informal relationship developed with the ECLAC/CDCC Secretariat had involved the co-ordination of initiatives for the establishment of the regional information systems which had been developed in the past decade. These consultations had resulted from the recognition of the need for a durable, yet flexible framework for the coordination and exchange of information in the region.

4. Ms. Martha Stone, Director of Information Sciences of the International Development Research Centre (IDRC), speaking from the perspective of a funding agency, underscored the importance of a coordinated development of regional information systems in minimizing costly duplication and unnecessary overlap. Ms. Stone pointed to the need for general acceptance of a strategy for the development of the systems and saw the recommendations emerging from the meeting as a tool for the guidance of donor agencies and national bodies. IDRC had supported the development of national, regional and subregional information systems since the seventies, and this support had also included the definition of a framework to guide the determination of priorities in the structuring of regional information systems including the very practical trend toward the development of problem-oriented systems.

5. Ms. Stone commended the consultant on the production of a valuable document which, for the first time has recorded the state of the regional information systems, identified strengths and weaknesses and proposed a regional strategy for the harmonious development of regional information systems.

ELECTION OF OFFICERS

6. The following officers of the meeting were appointed:

Chairman : Mr. Louis Wiltshire, CARICOM
Rapporteurs:
Ms. Yvonne Stephanson, University of Guyana

Ms. Sue Evan-Wong, OECS

The draft agenda was adopted.

7. In outlining the procedures to be followed, the Chairman explained that as the main focus of the meeting was the working document the consultant would present the contents of the document in stages with subsequent discussion by the meeting of the issues raised. The consultant's proposals as modified by recommendations of the meeting, would form the recommended strategy for the development of the regional information systems in the Caribbean to the year 2000.

8. He also explained that the CARICOM Secretariat and the ECLAC Subregional Headquarters for the Caribbean, in recognition of the valuable contribution which the consultant's report and the meeting's recommendations would make to the development of information systems in the region, expected to present the results of the meetings to the CARICOM Heads of Government and to the Caribbean Development and Cooperation Committee after circulation to member states.

BACKGROUND AND DEFINITIONS

9. The area of "information" under consideration was defined as: "all data concerning the present state, progress or results of research and development, and concerning the use of such results together with all other applicable data which might be used in technical or research and developmental activities".

10. Priority sectors, based on the stated priorities of member states, were defined as:

AGRICULTURE
DISASTER PREPAREDNESS
CULTURE
EDUCATION
ENERGY
ENVIRONMENT

INDUSTRY
TRADE
TOURISM
PUBLIC HEALTH AND PREVENTIVE MEDICINE
SOCIO-ECONOMIC PLANNING
UNEMPLOYMENT

11. While recognizing that culture might not be designated a priority development area by the member states, the meeting requested that culture be included in the areas for the development of regional information systems.

12. The geographical area under consideration was the membership of the CDCC - the CARICOM member states, as well as Cuba, Haiti, the Dominican Republic, Suriname, the Netherlands Antilles, the British and United States Virgin Islands and Aruba. It was proposed by the meeting that the other English-speaking states of the Caribbean, which are also members of the Caribbean Development Bank, be invited in the future to participate in the regional information systems.

REGIONAL INFORMATION SYSTEMS

13. The consultant defined the role which regional information systems should play in collecting, processing and disseminating information in the designated areas. The meeting confirmed that there was particular need for systematic development and testing of the systems' structures, based on the needs of the users and on the relevance of the outputs of the system to the needs of the users, both in content and in form.

14. The Caribbean Trade Information System (CARTIS) was seen as an example of the systematic development of a regional information system, in which the regional information system was designed in consultation with the member states, and in which the structure of the databases is currently being tested in two countries as the basis for the expansion to other member states.

15. The meeting requested that the role of the existing national coordinating bodies for information be recognized in the relationships between the regional focal points of the systems and the member states. The national coordinating bodies would be able to facilitate policy decisions and in some cases, positive action relating to the national participation in regional information systems and would subsequently be able to monitor the activities of national sectoral focal points of the regional information systems.

16. In addition to the existing and proposed systems listed in the consultant's report, it was proposed that there should be a study on the feasibility of a regional information system on culture. This study was expected to take into consideration the current initiatives including CARINEX and the Integrated Library and Information System

(ILIS) of the University of the West Indies which were proposed for consideration in the study as the basis for the development of a regional information system on culture.

17. Lack of access to data held in the region, particularly unpublished data, was recognized as a potential barrier to information held in the region, and it was therefore proposed that this problem be treated at the national level to facilitate the development of the regional information systems for the mutual benefit of all member states.

MANDATES

18. The fact that several organizations have general mandates which could include the development and co-ordination of regional information systems has resulted in several initiatives for systems which might result in duplication and overlap. Informal consultations between the agencies involved, as well as the current policy exercise, were expected to result in harmonization and maximum benefits from the regional systems.

SERVICES REQUIRED FROM THE REGIONAL INFORMATION SYSTEMS

19. In addition to the services currently provided by the systems, it was generally agreed that the systems should deliver outputs and services in formats appropriate to all users. The systems are therefore expected to be responsive to the needs of users and to have as their ultimate goal:

TRANSMITTING THE RESULTS OF RESEARCH, DEVELOPMENT PROJECTS
AND OTHER RELEVANT INFORMATION

THROUGH

INFORMATION SYSTEMS

TO

RESEARCHERS AND SCIENTISTS

POLICY-MAKERS, PLANNERS
PROFESSIONAL PRACTITIONERS
PRODUCERS AND MANAGERS

TO

THE INNOVATORS AND THE
ULTIMATE BENEFICIARIES - "THE GENERAL PUBLIC"
NATIONAL AND REGIONAL INFORMATION INFRASTRUCTURE

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20. The development of regional information systems and the corresponding national sectoral focal points have, as a result of resources committed by the governments of the region and by some donor agencies, demonstrated significant developments over the past decade. Each regional system would require a centre with a relevant information base to be chosen as a regional coordinating focal point and this would require the parent institution to be able to support the role of regional focal point.

21. The availability of human resources to manage and operate the information systems is still, however, a significant problem. For the services to achieve their full potential there is a need for professionals in several areas of information activities:

- librarians to develop the bibliographical information systems;
- statisticians to develop the quantitative information systems;
- mass media professionals for the repackaging of information held by the systems.

22. While training has been provided in these areas and most national centres have achieved minimum staffing, the meeting confirmed that there is urgent need for further training in the mangement of information resources and in most countries there was also the need for the development of a suitable career structure to ensure that information professionals in place and those subsequently trained will remain available to the region.

23. The meeting further recommended maximizing the resources directed toward training while ensuring the introduction of information technologies to the widest audience. This was expected to reduce the duplication in the region of short-term courses.

NATIONAL INFORMATION POLICIES

24. National information policy statements currently concentrate on the development of libraries and these have not yet included the other areas of the information sector. The meeting therefore recommended that the "information sector" be recognized as a valuable resource which if coordinated at the national level would be able to serve all levels of the population.

REGIONAL AND INTERNATIONAL ORGANIZATIONS - A ROLE IN THE DEVELOPMENT OF REGIONAL INFORMATION SYSTEMS

Regional Organizations

25. Several organizations have been active in the development of regional information systems particularly the UNECLAC Subregional Headquarters for the Caribbean, the CARICOM Secretariat, the Caribbean Development Bank and the University of the West Indies, mainly in relation to their programme areas. These organizations in the establishment of the regional information systems have provide valuable technical assistance to the member states.

International Organizations

26. IDRC has been the main organization providing assistance for information to support national and regional priorities. IDRC has therefore played a significant role in financial and technical assistance in several areas including the application of new technologies to regional information activities.

RECOMMENDED INFORMATION SYSTEMS

27. The meeting agreed that the systems could be grouped into three main categories: Science and Technology, Socio-Economic Information and the Humanities. It was also agreed that systems with potential for overlap should be developed in consultation with each other and the list of recommended systems be detailed in the final version of the consultant's report. Particular mention was made of the need for compatible data structures to ensure communication between the systems.

28. The implementation of a mechanism to test the viability of each system prior to full implementation was recommended by the meeting as a means of providing information on human, technical and financial resource requirements at the national and regional levels, as well as user requirements and related outputs and services.

29. Particular mention was made of the need for compatible data structures to ensure communication between the systems. The maintenance of the integrity of regional standards was considered to be a priority with assistance where possible to the national nodes to enable them to meet these standards.

MECHANISMS WHICH FACILITATE INFORMATION FLOW

30. The meeting dealt with these mechanisms - libraries, documentation centres, archives, statistical services, data and telecommunication services and mass communication facilities - in relation to their role in facilitating transfer of the data held by the

regional information systems. Libraries, the main centres for the dissemination of information, provide access and referral to the bibliographical and quantitative data services while being able to identify to the mass media significant items for wider dissemination.

31. Facilities for the electronic transfer of data within the region are not entirely in place, and it was therefore recommended that specialists from the region be requested to undertake a technical evaluation of the requirements for putting a public switched data network in place. This network would facilitate access to data held by the regional systems and would support other activities requiring regional communications.

MASS COMMUNICATION

32. It was agreed that the Government Information Services and the Caribbean News Agency (CANA) should be the main agencies employed for the dissemination of information on the systems and for disseminating repackage versions of the systems holdings.

POLICY PROPOSALS

33. The policy proposals for the establishment of a CARIBBEAN NETWORK OF REGIONAL INFORMATION SYSTEMS, as detailed in the working document were accepted by the meeting with modificants proposed in relation to the "Proposed Framework for the Co-ordination of Regional Information Systems". It was recommended that the policy monitoring committee be a "Consultative Committee", on which the following interests would be represented:

- national coordinating bodies;
- regional organizations responsible for the development of regional information systems;
- national focal points of regional information systems;
- the universities;

and the specialist areas of:

- telecommunications;
- mass communications;
- statistics;
- computerization.

The meeting recommended that the ECLAC/CDCC and CARICOM secretariats should take the necessary steps to ensure the formation of the Committee based on the above representation.

34. One task of this committee would relate to the process of establishment of regional information systems ensuring in particular that appropriate activities and/or criteria are defined and applied to the establishment of each system. These were expected to cover the following:

(a) that the issues of sustainability, human and physical resource requirements, impact of the national financial resources on the development of the system would be addressed by all governments of participating countries in the establishment of a system;

(b) that the requirement for a centre with a relevant and adequate information base to be chosen as a regional co-ordinating focal point and for the parent institution to be able to support the role of focal point, be met;

(c) that proposals for the establishment of new information systems be examined in the context of already established systems and planned programmes with a view to optimizing the use of resources;

(d) that the information systems are indeed responsive to the needs and priorities of the countries;

(e) that there is a clear definition of the target user groups, which will imply acceptance of the subject scope, and inputs and services of the systems;

(f) that compatibility of the systems is maintained as well as standards and methodologies; and that where there is exception from compatibility, that there be a clear rationale for this;

(g) that the integrity of regional standards be treated as a first priority and that assistance be provided where necessary to the national systems to support the implementation of these standards;

(h) that as far as possible, a pilot project be used to test the viability of each system, and to provide a basis for determining users needs, services and outputs, and requirements for human, technological and financial resources required;

(i) that every effort be made to optimize the resources directed toward training, ensuring the introduction of information technologies and methodologies so that the largest audience can reached by the short-term training available in the region.

35. The Committee would also be expected to ensure that evaluation of the systems for effectiveness be systematically carried out in the light of the continuing development of the new sytems and in the light

of the changing priorities of the users.

36. The Committee or a sub-group of the Committee would participate in the negotiation process for external funding to support the establishment of regional systems or the continued operation of already established systems.

37. The Committee would also be expected to co-ordinate the overall management of the regional systems to ensure that the:

- objectives of the systems continue to be met;
- human, financial and physical resources be put to maximum use;
- areas of wasteful duplication be removed;
- co-ordination of activities of external agencies involved in the establishment of regional information systems is constantly promoted and that information systems being established are done in the context of an agreed framework.

38. The Committee is expected to employ the existing information technologies for consultations. The possibility of using the University of the West Indies Distance Teaching Experiment (UWIDITE) for holding meetings of the Consultative Committee is to be investigated.

39. In conclusion, the meeting agreed that the final version of the working document and the recommendations of the meeting be presented to the member states and be submitted to the next meetings of the CARICOM Heads of Government and of the Caribbean Development and Co-operation Committee for ratification.

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POSTSCRIPT: THE CONSULTATIVE COMMITTEE ON CARIBBEAN REGIONAL INFORMATION SYSTEMS

Inaugural Meeting

The first Meeting of the Consultative Committee on Caribbean Regional Information Systems was convened October 6-7, 1988 in Port-of-Spain, Trinidad.

The Meeting finalized the membership of the Consultative Committee in accordance with the recommendations which had been accepted by the Conference of Heads of Government of the Caribbean Community and the Caribbean Development and Cooperation Committee in 1987.

The Meeting also drew up a programme of work to be accomplished within the first three years; elected a chairman and decided on the location of the Secretariat for the next three years.

Membership

Membership is on a representational basis and relates to institutions which coordinate regional information systems, national focal points which will present the national perspective regarding regional information systems, national information systems, interest groups and/or related professional associations and the universities. Within each category, with the exception of the first, membership rotates on a three year basis.

The organizations/institutions listed below are members of the Consultative Committee.

1. Regional integration organizations coordinating and executing sectoral information systems.

   - United Nations Economic Commission for Latin America and the Caribbean (ECLAC)
   - Caribbean Community (CARICOM)
   - Caribbean Development Bank (CDB)
   - Organization of Eastern Caribbean States (OECS)

2. Other coordinating and executing centres of regional information systems.

3. National focal points of regional information systems.

4. National coordinating bodies of national information systems.

5. The regional university - University of the West Indies.

6. Special focus groups - telecommunication authorities, associations of statisticians, associations of librarians/information specialists, the media, data authorities.

Executive Committee

The de facto executive committee consists of the four integration institutions mentioned above.

The Chairman for the next three years is Ms. Carol Collins and the Secretariat for the corresponding period will be the United Nations Economic Commission for Latin America and the Caribbean (UNECLAC).

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